THE DEVELOPMENT OF CLASSROOM LEARNING COMMUNITY IN LIBERAL STUIDES IN HONG KONG SECONDARY SCHOOLS

by

MA Tak Yee, Maggie

A research dissertation submitted in partial fulfillment of the

Requirements for the Degree of Bachelor of Education (Liberal Studies)

at The University of Hong Kong

May 2013

Declaration

I declare that this thesis represents my own work, except where due acknowledgement is made, and that it has not been previously included in a thesis, dissertation or report submitted to this University or to any other institutions for a degree, diploma or other qualifications.

Signed: _____

Ma Tak Yee, Maggie

Acknowledgements

First of all, I would like to express my sincerest gratitude to all the people who have provided unlimited guidance and support to me in the completion of this research dissertation. In particular, I would like to extend my deepest gratitude to my supervisor, Dr. Dennis Fung Chun Lok, for his unfailing support and guidance throughout the research journey. His insightful comments and suggestions have helped me to clarify my thought and research direction, and guide me to accomplish a high standard of scholarly work. Moreover, his valuable advice and sharing have enhanced my understanding of quality education.

In addition, I would like to thank the principal, vice-principals, teachers, and students who participated in this research. Without their cooperation and support, I could not have successfully completed this enquiry study.

Moreover, a special thank should be given to my friends and family members. I am blessed to have their unconditional advice, encouragement, and support which helped me to overcome every challenge. Specifically, earnest thanks should go to those who assisted in coding the open responses and qualitative data. Their kind assistances were important to me to accomplish my study.

Table of Contents

List of Figures

Abstract of research dissertation entitled

The Development of Classroom Learning Community in Liberal Studies in Hong Kong Secondary Schools

Submitted by

MA Tak Yee

For the Degree of Bachelor of Education (Liberal Studies)

in the Faculty of Education

at the University of Hong Kong

in May 2013

The purpose of this study is to explore the effectiveness of inquiry-based learning in encouraging the development of classroom learning community in Hong Kong secondary school classrooms. In the design of this study, teaching intervention of issue-enquiry approach advocated by the Curriculum Development Council and the Hong Kong Examinations and Assessment Authority was adopted to encourage cooperation and self-directed learning among students in groups. In the research, 33 Secondary 1 students and 34 Secondary 4 students declared their interests of joining the study and subsequently received a two-month teaching intervention. Questionnaire-based survey and focus-group interview were used at the beginning and at the end of the teaching intervention to collect students' perception of group learning. The results showed that inquiry-based learning successfully encouraged the development of classroom learning community in senior secondary school classroom. Meanwhile, the progress of group learning of junior students was also accelerated after the intervention. Furthermore, the research findings also indicated the positive impacts on students' whole-personal development with the use of a holistic curriculum and the sufficient guidance provided by their teachers.

Chapter 1

Introduction

1.1: Background

Over the past few decades, there have been calls for curriculum reform in which schools are suggested to provide learning environment which is suitable for encouraging students' own learning. These educational demands are driven by the change of the nature in the society in which well-educated workers and their productivity are treated as the most precious asserts in the 21st century (Drucker, 1999). Corresponding to the structural change in the society, schools have no doubt that they take the imperative role of developing students' life-long learning skills and interpersonal competences. As a result, some institutions have been attempting to develop experience in the use of learning community to provide a different classroom strategy, especially in higher education (Kellogg, 1999; Zhao & Kuh, 2004). Several researchers have conducted year-long investigation to review the major findings of learning community in particular levels of education including Finley (1991), MacGregor (1991) and Zhao and Kuh (2004). These research indicate that learning community enhances students' academic performance, engagement in learning activities as well as intra- and interpersonal competencies. Besides, much research is interested in studying cooperative learning which is an essential element in the learning community as echoed by Johnson and Johnson (1990) (as cited in Lenning and Ebbers, 1999). These studies demonstrate that learning community and cooperative learning share similar features and they can be interchangeable in nature. The common features in a cooperative learning group fill the blind spot of measuring the development of learning community.

Moreover, inquiry-based learning has been introducing in many public schools since the early 1900s (Wells, 2011). Its experiential and interactive nature of learning has attracted many

practitioners' and researchers' attention and carried out several investigations including Rose (2008), Wells (2011) and Buch and Wolff (2000). These studies show that inquiry-based learning enhances students' independent thinking and cultivates life-long learning skills, even though some challenges have been found from its previous practices.

1.2: The Reintroduction of Liberal Studies in Hong Kong New Senior Secondary Education

Referring to the context in Hong Kong, the curriculum reform in the new senior secondary education has changed the landscape of Hong Kong education. The interdisciplinary nature of Liberal Studies has been reintroduced as a compulsory subject in 2009. The teaching and learning strategy suggested in the curriculum and assessment (C&A) guide indicates the important of building a learning community (Curriculum Development Council and the Hong Kong Examinations and Assessment Authority [CDC& HKEAA], 2007). Teachers and students are encouraged to be partners in learning and contribute to the common goal of the community. Moreover, diversity of pedagogies, such as discussion and debate are suggested to be practiced in learning community during Liberal Studies lessons. This inclusion of cooperative learning elements in classroom learning turns over a new leaf in the use of pedagogy in response to the change of educational focus from product to process.

Moreover, inquiry-based learning is suggested as the fundamental strategy to develop students' independent and life-long learning skills (CDC& HKEAA, 2007). Three Areas of Study, 'Self & Personal development', 'Society & Culture' and 'Science, Technology & the Environment' are divided into six modules in the curriculum framework to provide a platform for issues enquiry (CDC& HKEAA, 2007). Besides, some possible perspectives and directions in exploring inquiries are given in the explanatory notes to guide teachers and students to go through the experience of self-directed learning. This paves the way for students to conduct their

Independent Enquiry Study (IES) in group: sharing information and ideas and giving comments on each other's work so as to build a learning community.

1.3 Research Rationales

With reference to a school curriculum review and the Liberal Studies C&A guide, CDC & HKEAA has strong incentive to recommend schools to adopt inquiry-based learning and to build learning community in their classrooms. The report of *Learning to Learn – The Way Forward in Curriculum Development* clearly indicates the flexibility of schools to use different pedagogies to meet individual needs and to cultivate students' generic skills including cooperative skills, communication skills, critical thinking skills, problem-solving skills and self-management skills (CDC, 2000). Moreover, inquiry-based learning is recommended in Liberal Studies C&A guide as the main pedagogy for conducting enquiry. Besides, the building of learning communities suggested in Chapter 4.5 of C&A guide further indicates government support in establishing learning communities in schools. As a result, inquiry-based learning and building of learning community in classroom are expected to play a vital role in Hong Kong secondary education. This paradigm shift in curriculum design from teacher-centered to student-centered learning greatly draws my attention since my previous education was mainly received passively through lecturing. The contrast between my learning experience and the current pedagogical reform arouses my interest in studying the development of classroom learning community. Therefore, the research focus is mainly on

- the development of classroom learning community in Liberal Studies in Hong Kong secondary schools under the implementation of inquiry-based learning

It is believed that this research will enrich this area of professional study and to provide practical suggestions for practitioners in developing classroom learning community in Liberal Studies lessons.

Chapter 2

Literature Review

To begin with, review on literature concerning learning community was conducted and little research was found in studying the development of classroom learning community. Given limited academic research on this field, some researchers draw a connection between cooperative learning and learning community such as Johnson and Johnson (1990, 1994, 1999b). A review of cooperative learning is therefore provides criteria for measuring the development of classroom learning community. Besides, literature on inquiry-based learning were reviewed and showed that there are numerous definitions. These studies provide empirical evidences on how inquiry-based learning influences the development of classroom learning community in schools and help me to formulate my research questions.

2.1 Study of Learning Community

2.1.1 History of Learning Community

Learning community has been practiced recently in higher education as an institutional innovation. However, this pedagogy is not newly introduced and its origin can be dated back to 1927 when it was first examined in an 'experimental college' program at the University of Wisconsin organized by Alexander Meiklejohn (Kellogg, 1999; Lenning and Ebbers, 1999; Smith, 2001). Although the program was terminated after six years of implementation, its intention of altering the original educational method provided the fundamental principles of learning community for later practices. Subsequently, the concept varied in different models and reached its contemporary version in the early 1990s when Vince Tinto conducted an in-depth study in a university and a community college. This study indicated the effectiveness of learning community and showed that student involvement was the key factor which contributed to

effective learning environment (Smith, 2001; Zhao & Kuh, 2004). With the substantial growth of interest in learning community, more and more institutions adopted this pedagogy. It also draws several scholars' attention and their academic publications will be discussed in the following sections.

2.1.2 Definitions of Learning Community and Cooperative Learning

In view of the related literature, there is no standard definition of learning community. However, the principles of 'community' introduced by Boyer in 1987 served as an initial driving force for the development of learning community (as cited in Lenning and Ebbers, 1999). Boyer pointed out that a community is (1) 'purposeful', students share common goals and work together; (2) 'open', freedom of expression is respected; (3) 'just', individual dignity and diversity are embraced; (4) 'disciplined', individuals follow the ground rules and purse to the common goals; (5) 'celebrative', rituals are shared widely (1999). Building upon these principles, Tinto provided an additional impetus for the building of learning community (Kuh, Schuh, Whitt, 1991). He summarized that all learning communities have the common features of 'shared knowledge' and 'shared knowing' (Tinto, 1998a, p.171). It is suggested that a learning community draws connection between courses and students, as the learners in the community share experience of learning and work together interdependently and responsibly (Tinto, 1998b). In addition, he suggested a few more characteristics which were found in all learning communities including 'promote caring, trust and teamwork' (Kilpatrick, Barrett & Jones, 2003), 'foster the development of young people and link with the outside world' (Bielaczyc & Collins, 1999; Lenning and Ebbers, 1999, p. 10). Parallel to these studies, Harada, Lum & Souza (2003) indicated some essential features of learning communities including students' self-directed learning and self-reflection. Moreover, teachers take the facilitative role in the learning process and students become the active learners in the community (Washington Center News, 1991).

Apart from the important features of learning communities, Lenning and Ebbers (1999) identified learning communities into four generic forms: 'curricular learning communities', 'classroom learning communities', 'residential learning communities' and 'student-type learning communities' (p.11). Following my interest in understanding students' learning within a group, the 'within-classroom learning communities' which is under the category of 'classroom learning communities' (p.17) is selected for my research focus. According to Johnson and Johnson (1990), in order to achieve successful learning communities, 'learning communities must be "cooperative learning groups" rather than "traditional learning groups"' (as cited in Lenning and Ebbers, 1999, p.44). Correspondently, Johnson, Johnson and Smith (2007) pointed out that 'positive interpersonal relationships promoted by cooperative learning are the heart of the learning community' (p. 20). In line with these views, I believed learning community and cooperative learning are interchangeable in nature. The latter can be used as a supplement for measuring the former. Review of cooperative learning is therefore subsequently useful to understand the practice of learning community.

Johnson and Johnson (1999a) identified cooperative learning as an instructional use of small groups to encourage students to work together in order to maximize individual and group learning. While most of the studies have common consensus on reporting its positive effects on students' cognitive and social development (Johnson & Johnson, 1999a), there are diverse views on its basic components. According to Johnson and Johnson (1986), there are five components within a cooperative learning group: 'positive interdependence', 'individual accountability', 'interpersonal skills', 'face-to-face interaction' and 'group processing'. However, Slavin (1990) and Kagan (1990) argued that a cooperative learning group only included the first two components. With reference to the definition of learning community, the model of Johnson and

Johnson is employed in this research in order to match its features closely and fill the blind spot of measuring its development.

2.1.3 Relationship between Learning Community and Cooperative Learning

Looking specifically at the definitions of learning community, cooperative learning shares all its major features and its components are emphasized for arranging learning community (Lenning and Ebbers, 1999). Firstly, 'positive interdependent' was perceived as the most important component in cooperative learning (Johnson & Johnson, 1999a). It emphasizes every member's contribution to the success of the group. This component echoes Boyer's view of learning community and closely links with the other component, 'individual accountability', which identifies the success of a group from every individual member's learning. Moreover, the component of 'face-to-face primitive interaction' includes caring and committed relationships among members in order to strive for the common goal. In view of these two components, they correspond to Tinto's view of learning community in which a sharing culture with close relationships among members was encouraged. In addition, 'interpersonal skills' and 'group processing' correlate to Harada *et al*'s study of learning community in which students evaluate, revise and reflect on the effectiveness of the group process and subsequently come up with social skills which are desirable for group learning. Based on the above clarification, learning community and cooperative learning are interchangeable in nature and the latter is adopted in this research to study the development of learning community.

2.1.4 Theory of Learning Community

Theoretically, learning community belongs to Lev Vygotsky's social constructivist approach in which it emphases the paradigm shift of educational focus from individual to community learning (Kilpatrick *et al*, 2003). In view of this, contribution of others to individual

learning is recognized in a learning community. The process of learning is embraced and students are suggested to participate actively in knowledge construction (Harada *et al*, 2003). Therefore, Feldman (2000) stated that successful learning community should include the principles of 'relationship', 'participation', 'reciprocity', 'membership' and 'collaboration' (p. xiii).

Parallel to Vygotsky's theory, John Dewey also believed that learning is a social process and students learn through interaction and participation (Zhu & Baylen, 2005). He advocated that learning is practiced through the experiences of different senses and in relation to students' living rather than through knowledge acquisition (Rose, 2008). In line with this view, students should be given the freedom to participate in experiences and construct their own understandings.

In sum, the above constructivist learning theories of Vygotsky and Dewey draw the attention of the context of learning and suggest that learning happens when students actively engage in social interaction and experiences in a learning community.

2.1.5 Significance of Learning Community

With reference to a host of academic studies, learning community demonstrates positive effects on students' intra- and interpersonal competencies. Academically, Zhao and Kuh (2004) found that there is a positive correlation between the student engagement in learning communities and their academic performance. The result of the study indicated that both first-year and senior college students had higher level of gains in academic study and the effect was relatively more significant for junior students than seniors. This result is consistent with the finding of Harada *et al* (2003) in which the later elaborated more on the positive impact on kindergarten students' personal development. Their findings indicated that there was improvement of children's self-efficacy and sense of empowerment when they studied in

learning communities (Finley, 1991). Besides, the children developed the sense of social responsibility in relation to the environment (Harada *et al*, 2003). In echo of these findings, MacGregor (1991) concluded the learning outcomes described by the undergraduates who participated in learning communities: 'developing self-esteem and motivation, developing sensitivity and respect for others, building community, making interdisciplinary connections, becoming life-long learners, and building fundamental communication and writing skills' (p. 9). In short, based on my review of the above research, learning community is recommended to be an ideal pedagogy for enhancing students' personal and interpersonal growth.

2.1.6 Learning Community in Hong Kong

Review on the available educational literature, there are relatively limited study of learning community in Hong Kong. Furthermore, these studies are mainly focused on building online learning community and professional learning community rather than classroom learning community among students. However, there is still a comprehensive research conducted by Yuen (2003) to examine the development of learning community in primary classrooms. In his case study, students from different schools were invited to participate in discussion in order to investigate the role of information and communication technologies and conditions which foster the development of learning community. The result indicates that students engaged more in learning and perceived collaboration and knowledge construction are indispensible in learning communities. Though teachers understand their role have been changed to facilitate students' learning, they inclined to traditional teaching as they still believed that teachers took important roles in helping students to achieve desirable learning outcomes. With regard to the limited literature and Yuen's finding, I believe learning community is still developing at primary stage in Hong Kong and requires more academic study and teacher training for its development.

2.2 Study of Inquiry-based Learning

2.2.1 Definition of Inquiry-based Learning

Similar to literature of learning community, there is variety of perspectives on the definition of inquiry-based learning. Theoretically, inquiry-based learning belongs to Jewey's constructivist approach in which 'people learn when they seek answers to questions that matter to them' (Dewey, 1938: as cited in Audet & Jordan, 2005 p.65). In this view, he proposed that learning should be experience based in which knowledge is not acquired passively but is constructed by learners who make sense of their lives (Glassman & Whaley, 2000; Pataray-Chin & Robertson, 2002; Yilmaz, 2008). Based on these premises, Centre for Excellence in Enquiry-Based Learning (CEEBL) (2007) proposed that inquiry-based learning is a continuous process including cycles of discovery: learners identify the area of ignorance, formulate questions and quest for the unknown knowledge. Correspondingly, Turkmen (2009) supplemented with CEEBL's third stage of enquiry and provided a more comprehensive enquiry process including 'critiquing experiments, distinguishing alternatives, planning investigations, researching conjectures, searching for information, constructing models, debating with peers and forming coherent arguments' (p.3). In this respect, CEEBL stressed that teacher' commitment of scaffolding students' learning is also in successful inquiry-based learning (Shih, Chuang & Hwang, 2010). In sum, despite the variation of views on inquiry-based learning, majority of them concurred with the importance of learning how to learn and student ownership of learning.

2.2.2 Approaches of Inquiry-based Learning

Based on the above definitions, CEEBL (2007) and Spronken-Smith (2008) stated that inquiry-based learning is derived from inductive approach which includes several student-centered approach such as cooperation, problem-solving and group discussion (Wells, 2011).

Besides, Turkmen (2009) suggested that inquiry-based learning is closely associated with project based learning. In addition, issue-enquiry approach is another strategy of inquiry-based learning indicated by Wilson, Grizzle *et al* (2011) and it has been advocated by CDC & HKEAA to be adopted in Liberal Studies lessons. Specifically, the nature of 'issue' encourages diversity of views with different interests and values (CDC & HKEAA, 2007). The process of issue-enquiry approach suggested by CDC & HKEAA (p. 90) includes:

1. Mastering the facts, understanding the phenomena, clarifying the concepts
2. Understanding the differences and conflicts involved
3. Reflection, evaluation, judgment, solution, action

and they will be adopted in this research since no research on issue-enquiry is found in my review.

2.2.3 Inquiry-based Learning in Hong Kong

A brief review of literature of inquiry-based learning in Hong Kong showed that there are positive effects on students' learning. The study of Chu, Tse, Loh, Chow, Fung and Rex (2008) indicated that there were improvement of Primary 4 students' reading abilities and attitude by employing a collaborative teaching model involving classroom teachers, IT teachers and librarians. Likewise, Wong and Day (2009) shared similar finding with Chu *et al* and revealed that secondary 1 students had significant improvement in their comprehension and knowledge application. In contrast, Yueng (2009) conducted a case study on the feasibility of adopting inquiry in Hong Kong primary classrooms. The study demonstrated that implementation of inquiry was unsuccessful and challenged by teachers' professionalism on this approach, and their perception on its impracticability in Hong Kong situation. Despite the fact that numerous

literature of inquiry-based learning in Hong Kong are conducted, there is no research on issue-based approach is found at the moment.

2.3 Research Questions

With reference to my review of literature, I notice that there are some knowledge gaps which have not been studied by researchers. As a result, they are insightful factors which help me to formulate my research questions. Firstly, based on my review of learning community, there is limited research on this institutional practice, particularly in Hong Kong context. Secondly, comparing the model of learning community, there is much literature of online learning community and professional learning community instead of classroom learning community among students. Similarly, there is no study on issue-based learning found in Hong Kong. Thirdly, comparing the participants' involvement, there is absent of study of junior and senior secondary school students in both literature of learning community and inquiry-based learning. Kindergarten children, college students and undergraduates were studied in research of learning community and primary students were invited to take part in study of inquiry-based learning. Last but not least, there is no study of learning community and inquiry-based learning in Liberal Studies. As a result, based on the knowledge gaps mentioned above, my research questions are subsequently formulated, including:

1. Does inquiry-based learning in Liberal Studies encourage the development of classroom learning community in both junior and senior secondary school classrooms?

2. Is there any difference between the development of classroom learning community in junior and senior secondary school classrooms?

3. How does inquiry-based learning in Liberal Studies encourage the development of classroom learning community in Hong Kong secondary school classrooms?

Chapter 3

Methodology

In this chapter, my methodological rationale of the study is explained and it is divided into several sections. Firstly, the reasons of adopting mixed research method are discussed and it serves as a basis for the later selection of research methods. Secondly, details of participants, procedures of data collection and their relationship with the research questions are examined. Lastly, details of data analysis and strategies for data justification are contemplated.

3.1 Methodology

This research adopted a mixed method research design in which it incorporated both quantitative and qualitative research methods into study. My rationale of employing this methodology was basically in line with Denzin's notion: each single methodology shows different dimensions of the reality, and therefore no single methodology is adequately fulfill the task (1978). In this respect, the idea of triangulation was introduced by Campbell and Fiske who believed that the combination of two methods improves the validity of the results rather than being the artifact of the methodology (Bouchard, 1976). Specifically, triangulation involves the use of different methods and sources to verify the result of another source in order to shed light on a particulate perspective (Creswell, 2007). In view of this, quantitative method of questionnaire-based survey and qualitative method of focus-group interview were used in this research in order to provide reliable and valid explanations of the current development of classroom learning community in Hong Kong secondary schools.

3.2 Participants

This research was conducted in a girls' secondary school. Prior to the commencement of the research, formal consent was obtained from the school principal (Appendix 1). Then, purposive

sampling was used in order to have samples from both junior and senior level. In this respect, a class of Secondary 1 and a class of Secondary 4 students who were approximately aged between 12 and 15 were invited to participate in this research. There were 33 Secondary 1 students and 34 Secondary 4 students returned the parent consent letters and students assent letters, and indicated their agreement on joining this study, particularly in the part of quantitative research (Appendix 2 & 3). Moreover, a simple random sampling was used to draw students to participate in follow-up focus-group interviews. There were 6 Secondary 1 and 6 Secondary 4 students agreed to participate.

3.3 Data Collection

3.3.1 Teaching Intervention

Teaching Intervention was conducted in Liberal Studies lessons throughout the whole research period. There were 14 lessons scheduled for the Secondary 1 class and 34 lessons scheduled for the Secondary 4 class which occupied two months of the academic year. The teaching intervention was constructed according to the issue-enquiry approach suggested by CDC & HKEAA which was indicated in section 2.2.2. It was practiced in the forms of case study, field study and project work, etc. In view of understanding the development of classroom learning community in Hong Kong secondary schools, cooperative learning methods such as competition, debate and group discussion were incorporated into the lessons.

3.3.2 Research Methods

Upon consideration of the research questions proposed in section 2.3, two different data collection methods were adopted in this research. A questionnaire-based survey was administered to all participants at the beginning and at the end of the study. Later on, focus-group interviews with students who joined voluntarily were carried out at the end of the study.

3.3.2.1 Quantitative Research Method

A self-report questionnaire-based survey was adopted to address the first and second research questions (refer to Appendix 4 for details). The rationale of using this instrumental tool was due to its advantage of collecting a large amount of samples within a short period of time (Babbie, 2007). It was administered by the researcher to all the participants in the first and last lessons, and each of them lasted for around 5 minutes. The questionnaire was adapted from the study of Fung (2012) which incorporates the five components of a cooperative learning group proposed by Johnson and Johnson in section 2.1.2 in order to study students' perception of group learning experience. In the first part of the questionnaire, there are 20 close-ended questions in 5 subsets correspond to the above components. Moreover, a five-point likert scale ($\text{Strongly disagree} = 1; \text{Strongly Agree} = 5$) is used to assess the questions. In the second part of the questionnaire, 2 open-ended questions are included to allow students to give open responses to the questions related to their perception of group learning and individual learning.

3.3.2.2 Qualitative Research Method

In order to enhance the reliability and validity of the research findings, quantitative results of students' perceptions of group learning were triangulated by the information obtained from the follow-up focus-group interviews (refer to Appendix 5 for details). The objective of conducting focus-group interview was to address the third research question and to understand the students from their points of view which might create a different reality (McMillan, 2008). 6 students from the participating classes were invited to join respectively after the last lesson. Two focus-group interviews were conducted in person and carried out in semi-structured form. Participants were asked to answer 7 initial questions about their experience in group learning. Some immediate questions would be asked according to individuals' responses. In order to

protect the privacy of the participants, pseudonym was used for each individual. Besides, audio-recorded, note-taking and transcription were conducted so as to ensure the reliability of the collected data.

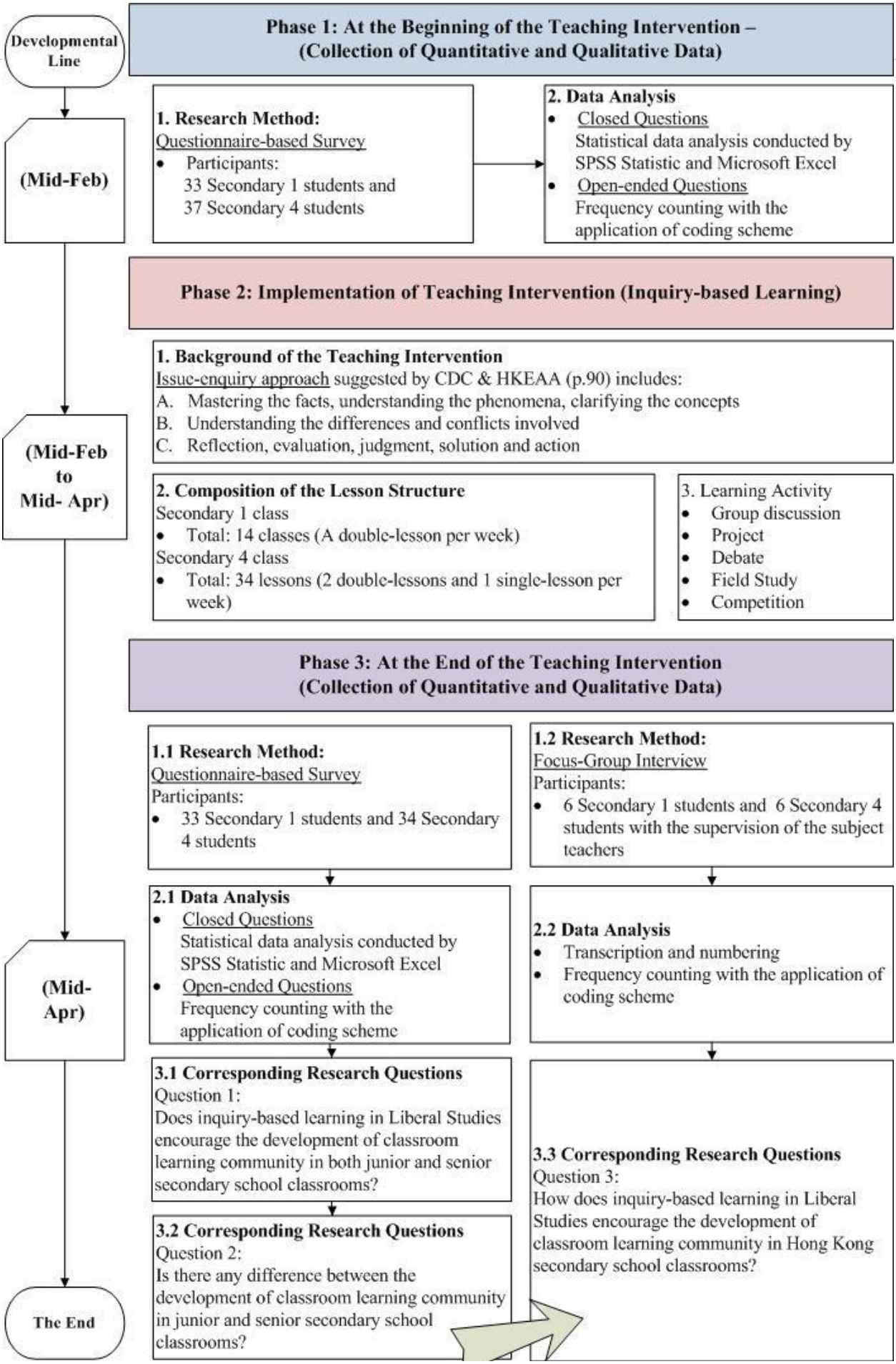


Figure 1 Research Flowchart

3.4 Data Analysis

3.4.1 Questionnaire-based survey

With respect to study the data collected from the first part of the questionnaire-based survey, a paired-samples *t*-test was conducted with the use of SPSS Statistic to compare the level of students' perception of learning in group in two classes before and after the intervention (refer to Appendix 6 & 7 for details). The statistical findings generated from the *t*-test were useful to answer the first research question. Moreover, similar *t*-tests were carried out to compare the changes of students' perception between the two classes before and after the intervention so as to answer the second research question (refer to Appendix 8 for details).

In order to answer the first research question, this survey is structured with two types of questions. The odd number questions indicate that the specific components of learning community are formed when the post-test scores are higher than the pre-test scores, and vice versa in the cases of even number questions. Given that there are two types of questions in the survey two hypotheses were made for all the odd and even number questions respectively:

1. Concerning the odd number questions, a null hypothesis of having the mean of pre-test is greater than or equal to the mean of post-test:

   $H_0: \mu_1 \geq \mu_2$

   where:

   $\mu_1 =$ the mean of pre-test, and

   $\mu_2 =$ the mean of post-test.

   An alternative hypothesis of having the mean of pre-test is smaller than the mean of post-test:

H_1: $\mu_1 < \mu_2$

where:

$\mu_1 =$ the mean of pre-test, and

$\mu_2 =$ the mean of post-test.

2. Similarly, regarding the even number questions, a null hypothesis of having the mean of pre-test is smaller than or equals to the mean of post-test:

H_0: $\mu_1 \leq \mu_2$

where:

$\mu_1 =$ the mean of pre-test, and

μ_2 = the mean of post-test.

An alternative hypothesis of having the mean of pre-test is greater than the mean of post-test:

H_1: $\mu_1 > \mu_2$

where:

$\mu_1 =$ the mean of pre-test, and

$\mu_2 =$ the mean of post-test.

Moreover, in order to answer the second question, improvement scores of students' perception of each question between two tests were calculated. After the post-test score is subtracted by pre-test score, then the improvement scores of every odd number question can be

obtained, and vice versa for the cases in even number questions. Later, two hypotheses were proposed as follows to study the improvement of perception between two classes:

A null hypothesis of having the mean of improvement of Secondary 1 class is the same as the mean of improvement of Secondary 4 class:

H_0: $\mu_1 = \mu_2$

where:

μ_1 = the mean of improvement of Secondary 1 class, and

μ_2 = the mean of improvement of Secondary 4 class.

An alternative hypothesis of having different means of improvement between Secondary 1 class and Secondary 4 class:

H_1: $\mu_1 \neq \mu_2$

where:

μ_1 = the mean of improvement of Secondary 1 class, and

μ_2 = the mean of improvement of Secondary 4 class.

Then, SPSS Statistic was used to carry out *t*-test in order to find the questions which had statistically significant difference between the mean of tests or classes.

To study the second part of the questionnaire-based survey, grounded theory was adopted in which 'data are gathered first and then synthesized inductively to generate generalizations, and models of frameworks' (McMillan, 2008, p.271). In view of this, conclusions are drawn from particular details rather than from the 'top down' approach'. A coding scheme was generated by

reading the students' responses rigorously, assigning codes to some of the data, identifying emerging themes, and generating hypotheses (Tinto, 1998b). Therefore, frequency of similar textual variables were counted and grouped into standardized categories in order to understand students' perception of group learning and individual learning (refer to Appendix 9 & 10 for details). Since the numbers of students' opinions are different in both tests and different classes, the numbers of variables in both tests and each class had to be standardized before doing the comparison (Appendix 9, Table 1.3 & 2.3; Appendix 10, Table 3.3 & 4.3). For instance, concerning the code of 'better communication skills' in the Question 5 of both pre-test and post-test of Secondary 4 class, their initial responses in pre-test should be scaled and divided by its total number of responses, and followed by a multiplication of total responses in post-test (1/43*49 = 1.1).

3.4.2 Focus-group Interview

Similarly, coding theme was used to study the dialogical data collected from two focus-group interviews. Frequency of similar dialogical variables were counted and coded in standardized categories with the allowance of having 2 coded of each sentences (refer to Appendix 11, 12 & 13 for details). Comparing the frequencies of categories concerned in different classes, sample size and duration of focus group were standardized (Appendix 11, Table 5.1).

3.4.3 Validity

In contemplating about the validity of the research findings, several validation strategies had been employed. Methodologically, mixed research method was adopted in order to practice triangulation to reduce the risk of any particular data interpretation affects the results. Besides, the design of the project was built on current educational theory. The intervention was structured

according to the issue-enquiry process suggested by CDC & HKEAA and the learning activities were purposely designed to incorporate the components of cooperative learning group. Practically, in term of quantitative research method, the questionnaire-based survey was adapted from the study of Fung (2012) which was rigorously validated in academic field. Moreover, in term of qualitative research method, two focus-group interviews were conducted under the supervision of the original Liberal Studies teachers. Moreover, all interviews were audio-taped, transcribed, coded and numbered in order to ensure the findings can be traced back to the original sources (Verner & Adbullah, 2012). To delimit the subjectivity in the coding, three times of checking were carried out by three different people.

Chapter 4

Findings

In this chapter, hypothesis testing and discourse analysis were adopted to analyze the data collected from the study. The results were presented in several themes which are emerged from the five components of a cooperative learning group proposed by Johnson and Johnson in section 2.1.2.

4.1 Positive Interdependence

Concerning the data obtained from the questionnaire-based survey, the results in Section A revealed that students of Secondary 1 and 4 were fairly interdependent on group members in classroom learning communities. The paired-samples *t*-test demonstrated that in question A1 and A3, there were statistically significant differences between pre-test and post-test from both classes ($p < .05$) (refer to Appendix 6 & 7 for details). These results suggested that inquiry-based learning has an effect on students' positive interdependence from both classes when they learnt in group. Specifically, students from both classes were proud of their classmates' results and recognized their success was depended on cooperation with their classmates. On the contrary, the independent-samples *t*-test showed that there was no statistically significant difference between the two classes ($p > .05$) (refer to Appendix 8 for details). The statistical data in this section suggested that both classes shared the same perspective on the improvement of positive interdependence in group learning.

In this respect, the open responses collected from the survey revealed that more interaction in classroom learning promoted positive interdependence of students from both classes (refer to Appendix 9 & 10 for details). This can be exemplified by:

'I think I need to work hard with my classmates in order to complete the task.' *(A Secondary1 student)* (Table 1.2, Student 8)

'Cooperative learning encourages interaction between students. We can teach one another. As a result, our relationships and academic results are improved.' (*A Secondary 4 student*) (Table 3.2, Student 4)

Moreover, the improvement in interdependence of Secondary 4 students was also related to the chance of students to exchange their ideas and cooperate effectively with classmates. These can be viewed by the following examples:

'Different ideas can be shared in group learning. We cooperate with classmates and consequently improve our academic results.' (Table 3.2, Student 34)

'I think group learning is mutually beneficial to every member. It improves our learning.' (Table 3.2, Student 18)

'I think group learning improves our relationship with classmates. Through communicating with group members, our thinking is stimulated. We conduct analysis from multiple perspectives.' (Table 3.2, Student 12)

Similarly, students' dialogue in the focus-group interview also indicated that their interdependence were improved when they experienced effective cooperation with group members (refer to Appendix 12 & 13 for details). Consequently, their understanding of the subject content and learning incentive were improved.

'My group members help me when I answer the question wrongly. They help me to understand the questions' (Line 39, *S1: Student E*)

'*(It is)* because everyone search for different information. We can learn different aspects and problem-solving skills from each other's findings.' ' (Line 45 – 46 *S1: Student C*)

'Contribution from each member is required. Group Learning is similar to doing puzzle. Connection between contributions from each individual is important.' (Line 204 *S4: Student D*)

'We learn more in group when we listen to other members' point of view. It is more interesting than listen to teachers' explanation…we have a relatively high incentive to learn in the lesson....Learning through inquiry-based learning is easier since it encourages students to think independently.' (Line 22 – 25 & 35 – 37 *S4: Student B*)

To sum up, the results of the paired-samples *t*-tests indicated that the null hypothesis ($H_0: \mu_1 \geq \mu_2$) in question A1 and A3 was statistically rejected. This result suggested that students are quite positively interdependent in group learning since half of the questions in Section A have the significant changes. While the result of the independent-samples *t*-test supported the null hypothesis ($H_0: \mu_1 = \mu_2$) which showed that both classes had the same level of improvement of interdependence, students of both classes enjoyed interaction and cooperation with one another, and so their knowledge enhancement and higher learning incentive are vital in developing their interdependence.

4.2 Face-to-face Primitive Interaction

Regarding the results of Section B of the survey, Secondary 1 and Secondary 4 students enjoyed interaction in group learning only to a small extent. The paired-samples *t*-test showed that in question B1, there was statistically significant difference between pre-test and post-test from Secondary 1 class ($p < .05$) (refer to Appendix 6 for details). A similar result was found in

question B3 of the survey collected from Secondary 4 class (refer to Appendix 7 for details). While these results indicated that inquiry-based learning encouraged students' interaction, the insignificant differences between the tests in other questions of both classes illustrated that students did not really apparently interact in group. Moreover, the independent-samples *t*-test revealed that no statistically significant difference was found between two classes ($p > .05$) (refer to Appendix 8 for details). This result indicated that both classes shared similar experience of interaction in group learning.

On the contrary, some students' responses from the open-ended questions of the survey of both classes claimed that they had more interaction in group and consequently improved the learning atmosphere in class (Appendix 9 & 10). This can be illustrated by the following examples:

> 'Group learning improves the learning environment. We have the opportunity to communicate with each other.' *(A Secondary 1 student)* (Table 1.2, Student 11)

> 'The class becomes more interesting and interactive. It is not boring. We learn from each other and explore the issue from different perspectives.' *(A Secondary 4 student)* (Table 3.2, Student 9)

In addition, the responses of experiencing effective cooperation given by Secondary 4 students provided some evidences to explain the increase of interaction in classroom learning.

> '*(Group learning)* is relaxing and interesting. It enhances our cooperative learning skills.' (Table 3.2, Student 23)

> '*(Group learning)* is a valuable chance to learn team spirit.' (Table 3.1, Student 15)

Likewise, some students' dialogue obtained from the focus-group interview revealed that they had more interaction in group and enhanced their understanding of the subject (Appendix 11 & 12), such as:

> 'As we sit together in group, we discuss the question and understand the characters of each member. Therefore, we will take it as a consideration when we work in group.' (Line 50 – 52 *S1: Student A*)

> 'Learning in group provides opportunity for students to raise questions and discuss with group members when they do not understand the questions. Therefore, students understand more about the concepts...We can only think from single dimension when we learn individually. However, we can improve our thinking when we discuss with our classmates.'' (Line 20 – 21 *S4: Student A*)

> 'Inquiry-based learning is student-centered in which teacher provides scaffold to students, then students search for the information. This method makes learning easier.' (Line 35 – 37 *S4: Student B*)

Nevertheless, these dialogical data of having 'better cooperation', 'better communication skills' 'better interpersonal skills' and 'exchange of ideas' were little in the conversation. Specifically, only half of the interviewed Secondary 4 students shared the experience of exchanging ideas *(Student A: 3 responses, Student B: 4 responses, Student C: 2 responses,*

Student D: 2 responses, Student E: 2 responses and Student F: 4 responses). These findings indicated that students in general had limited interaction in group.

In concluding the results of this section, the statistical data of the paired-samples *t*-test rejected the null hypotheses ($H_0: \mu_1 \geq \mu_2$) of question B1 in the survey of Secondary 4 class and question B3 in the survey of Secondary 1 class. This showed that students did not have positive interaction in group since only one out of four questions in Section B has the significant changes. Besides, the results of the independent-samples *t*-test sustained the null hypothesis ($H_0: \mu_1 = \mu_2$). This indicated that two classes shared similar improvement level of interaction in group learning. However, it is worth noting that the opportunity of sharing ideas and cooperation may be the important factors which influence group interaction.

4.3 Individual Accountability

With reference to the results of Section C of the survey, Secondary 4 students were somehow accountable to do their share of work in group. The paired-samples *t*-test indicated that in question C1 and C3, there were statistically significant differences between the pre-test and post-test of Secondary 4 class ($p < .05$) (refer to Appendix 7 for details). However, the *t*-test only showed that there was statistically significant difference in question C3 between two tests of Secondary 1 class ($p < .05$) (refer to Appendix 6 for details). These results implied that the teaching intervention fairly enhanced individual responsibility of Secondary 4 students when they learnt in group. Though the above data seemed to suggest that Secondary 4 students were more responsible for their learning, the independent-samples *t*-test indicated that there was no statistically significant difference between the two classes ($p > .05$) (refer to Appendix 8 for

details). This result presented the fact that both classes had the same level of enhancement of individual accountability in group learning.

According to the students' responses stated in the survey, ineffective cooperation experienced by some Secondary 1 students might lead to the hesitation of them to suggest group members to contribute their efforts (Appendix 9 & 10). Two examples were extracted for illustration:

'I think every member should share their views in group.' (Table 1.2, Student 16)

'Other group members should answer more questions.' (Table 1.2, Student 27)

Although Secondary 4 students also experienced ineffective cooperation in group learning, the number of this response stated in post-test decreased. In particular, a few students regarded the ineffective cooperation as an opportunity to improve their learning. A typical example was:

'It is difficult to pay attention in class. We talk during lessons. *(However)*, we share our ideas in group which may stimulate each other's thinking…' (Table 3.2, Student 14)

Besides, they believed that problems could be solved easily if group members contributed and cooperated in group, such as:

'Good cooperation. Problem can be solved together.' (Table 3.2, Student 8)

In view of this, the dialogue of Secondary 1 students pointed out that building up self-confidence and high interest of learning were precious factors to develop self-responsibility (Appendix 12). These can be ascertained by the extracts below:

'You will not actively answer the questions if you are not confidence enough.' (Line 92 *S1: Student E*)

'I want to gain marks for my group.' (Line 93 *S1: Student B*)

On the contrary, Secondary 4 students stressed that the type of assessment and effective cooperation were determined factors which improved their responsibilities of learning (Appendix 13). These can be exemplified by:

> 'The assignments of Secondary 1 to 3 are mainly worksheets… we simply copied the answers from textbooks. However, we *(have to do project)* now and we ought to finish it by ourselves.' (Line 176 – 178 *S4: Student B*)

> 'We have to learn in group and each of us has the duty. We have to be responsible for our share of work; otherwise the progress of team learning will be affected.' (Line 179 – 181 *S4: Student C*)

To conclude, the data of the paired-samples *t*-test rejected the null hypothesis (H_0: $\mu_1 \geq \mu_2$) of question C3 in the survey of both classes and question C1 in the survey of Secondary 4 class. This revealed that Secondary 4 students develop self-responsibility in an ordinary level since half of the questions in Section C have significant changes. There is no significant difference of the sense of responsibility of Secondary 1 students. In addition, the data of the independent-samples *t*-test supported the null hypothesis (H_0: $\mu_1 = \mu_2$) which showed that there is no significant difference between two classes' improvement of self-responsibility. These results can be understood by the dialogue of junior students who were relatively more concern about effective cooperation than senior students, while the later mainly considered about the type of assessment. The diverse consideration of two classes illustrated that students' confidence and problem-solving ability were subsequently affected and their sense of responsibility might be hindered.

4.4 Interpersonal Skills

Given the results of Section D of the survey, Secondary 4 students successfully acquired interpersonal skills in group learning after the teaching intervention. The paired-samples *t*-test revealed that there were statistically significant difference in question D1, D2 and D3 between their pre-test and post-test ($p < .05$) (refer to Appendix 7 for details). However, there was no significant difference in all questions between the tests of Secondary 1 students (refer to Appendix 6 for details). Moreover, the independent-samples *t*-test suggested that there is significant difference of improvement of perception of working with cleverer classmates between two classes. It was shown by the significant difference in question D1 of the survey between two classes ($p < .05$) (refer to Appendix 8 for details).

Concerning the statistical results, Secondary 1 students' responses obtained from the survey reflected that the experience of ineffective cooperation might hinder students' development of interpersonal skills (Appendix 9). This can be examined by:

'Few interaction in our group' (Table 1.2, Student 25)

'I hope every member will cooperate with one another.' (Table 1.2, Student 32)

In contrast, the benefit of exchanging ideas and high level of interaction in group enriched the interpersonal development of some Secondary 4 students. These can be illustrated by the following extracts:

'We discuss our views with group members and understand the diversity of opinions between each member…' (Table 3.2, Student 12)

'Group learning enhances my learning as well as my interaction and communication with friends.' (Table 3.2, Student 34)

In addition, the results of discourse analysis of the focus-group interview explained the chance of exchanging ideas among students seemed to be an essential factor to improve students' interpersonal skills of both classes, even though some Secondary 1 students agreed with this factor (Appendix 12 & 13), such as:

> 'We do not sit with friends when having group discussion. Therefore, we can make friends with other classmates who do not have close contact with us before.' (Line 60 – 61 *S1: Student A*)

> 'Our relationship is improved after the field study.' (Line 106 – 107 *S4: Student B*)

> 'I think our relationship has improved. It is because we discuss the problem together which consequently improve our communication skills and relationship.' (Line 110 – 111 *S4: Student C*)

> 'We do not have better relationship only within a group. We also develop better relationship with classmates in different groups during class discussion.' (Line 121 – 122 *S4: Student E*)

In summary, the results of the paired-samples *t*-test highlighted that Secondary 4 students improved their interpersonal skills since three out of four questions in Section D have the significant changes. The null hypotheses (H_0: $\mu_1 \geq \mu_2$) in question D1 and D3 were statistically rejected and the null hypothesis (H_0: $\mu_1 \leq \mu_2$) in question D2 was statistically rejected as well. On the other hand, the results of independent-samples *t*-test revealed that Secondary 1 and 4 students had different improvement of attitude about working with cleverer students since the null hypothesis (H_0: $\mu_1 = \mu_2$) of question D1 is statistically rejected. To explain the difference of

improvement, the effective cooperation and the opportunity of exchanging ideas and interaction are expected to be the relevant evidences for illustration.

4.5 Group Processing

Regarding the results of Section E of the survey, students of both classes shared positive feeling in group processing. The paired-samples *t*-test demonstrated that there were statistically significant differences in question E1 and E3 between the pre-test and post-test of both classes ($p < .05$) (refer to Appendix 6 & 7 for details). Practically, there were statistically significant differences in question E4 between the two tests of Secondary 1 class ($p < .05$) and in question E2 between the two tests of Secondary 4 class ($p < .05$). These significant results showed that both classes had positive attitude in group learning after the teaching intervention. Specifically, the independent-samples *t*-test revealed that the improvement of developing a sharing culture of both classes is different. This result was indicated by the significant difference in question E4 of the survey between two classes ($p > .05$) (refer to Appendix 8 for details).

Correspondingly, the open responses stated in the survey of both classes stressed that classroom learning environment was an important factors which improved their group processing (Appendix 9 & 10). This can be exemplified by:

> '*(Learning in group)* is easier to have communication. We interact and ask for help when having difficulty.' *(A Secondary1 student)* (Table 2.2, Student 11)

> 'Individual learning is boring and superficial. The learning environment of group learning is better and students are more attentive in class.' *(A Secondary1 student)* (Table 2.2, Student 17)

'Students exchange ideas in group. The learning environment is improved. Members help and learn from each other.' *(A Secondary 4 student)* (Table 4.2, Student 6)

Practically, in echo of the result of ineffective cooperation of some Secondary 1 students mentioned in section 4.4, they understood that effective cooperation was a necessary factor which affected the group processing, such as:

'I think *(group members)* have to cooperate.' (Table 2.2, Student 28)

Furthermore, attitude of others and learning efficiency in group were also the concerned factors in group processing mentioned by Secondary 4 students. These can be illustrated by the following examples;

'The attentiveness of group members and the level of noisiness in class…Is there any improvement of my results?' (Table 4.2, Student 14)

'The attitude of group members. The content and efficiency of the group work. Do group members participate actively?' (Table 4.2, Student 9)

'Thinking process is affected if we discuss loudly…' (Table 4.2, Student 36)

Similar to the above results, the dialogue of Secondary 1 students showed that they enjoyed group learning and their horizon had been widen since it is more interesting than direct teaching, such as:

'I choose group learning and outing *(field study)* since textbook does not include all the subject content.' (Line 138 – 140 *S1: Student A*)

'Individual learning does not involve group discussion. I will feel bored if there is no group discussion. I do not have the incentive to pay attention in class.' ' (Line 141 – 143 *S1: Student F*)

Correspondingly, the dialogue of Secondary 4 students revealed that a sharing culture was developed in group processing. They had better understanding of the subject and willing to exchange ideas with one another through participating in different kinds of learning activities. Some typical dialogues were extracted below:

'I understand that different aspects are included in the subject of Liberal Studies in the group processing. Therefore, you need to know everything in order to widen your horizon and develop critical thinking. I have developed the sense of responsibility.' (Line 225 – 227 *S4: Student B*)

'I feel nervous and fear to speak when I present individually. However, I have no anxiety when I study in group….We discuss in group. The process is interesting and funny. I do not feel anxious when I present in group as my group members will support me.' (Line 230 – 234 *S4: Student C*)

'It is easier to learn through inquiry-based learning since it includes group discussion, mind map drawing and project… You will remember the content more after conducting an enquiry than having a lecture.' (Line 262, 283 – 287 *S4: Student B*)

By synthesizing the above results, the data of the paired-samples *t*-test rejected the null hypotheses ($H_0: \mu_1 \geq \mu_2$) of question E1 and E3 in the survey of both classes. The *t*-test also rejected the null hypotheses ($H_0: \mu_1 \leq \mu_2$) of question E2 and E4 in the survey of Secondary 4 and Secondary 1 classes respectively. These results suggested that both classes experienced

better group processing since three out of four questions in Section E have significant changes. Besides, the independent-samples *t*-test indicated that two classes had different level of improvement of cultivating a sharing culture since the null hypothesis (H_0: $\mu_1 = \mu_2$) of question E4 is statistically rejected. In view of this, the design of learning activity and classroom learning environment including the learning attitude and cooperation of every student and the chance of exchanging ideas are all precious elements to determine the group processing.

Chapter 5

Discussion

This chapter attempts to answer the research questions of the present study. Firstly, they are examined by the discussion concerning the research findings and previous literature. Then, the research limitations and recommendations for further study are reviewed.

5.1 Research Question One: Does inquiry-based learning in Liberal Studies encourage the development of classroom learning community in both junior and senior secondary school classrooms?

Concerning my present study, the statistical data demonstrated that inquiry-based learning successfully encouraged the development of classroom learning community in senior secondary school classroom, but failed to establish it in junior secondary school classroom. The result of the paired-samples *t*-test revealed that, in 4 out of 5 sections, there were half or more than half of the questions revealed that there were significant difference between the pre-test and post-test of Secondary 4 class. This result indicated that Secondary 4 students successfully developed classroom learning community after the adoption of inquiry-based learning. They were more positive interdependent, accountable to individual and group learning; acquired positive interpersonal skills and enjoyed profitable group processing (Appendix 7). In contrast, the result of the same *t*-test revealed that, only 2 out of 5 sections, there were half or more than half of the questions revealed that there were significant difference between the pre-test and post-test of Secondary 1 class (Appendix 6). Though the results ascertained that Secondary 1 students achieved the most important component, positive interdependence in cooperative learning group suggested by Johnson & Johnson (1999a), there were 3 out of 5 sections cannot be achieved. Given that less than half of the total components of cooperative learning group were achieved,

the development of classroom learning community in Secondary 1 class is declared to be unsuccessful.

Similarly, the open responses and dialogical data shared fairly consistent results with the above statistical data. In agreement with Boyer (1987), Feldman (2000), Kilpatrick, Barrett & Jones (2003) and Tinto (1998a,1998b), the present study demonstrated that Secondary 4 students created a classroom learning community which generally consisted of the characteristics of better understanding of the subject knowledge, developed sense of responsibility and a culture of sharing, and had effective cooperation with their group members (Appendix 10, Figure 3.2).

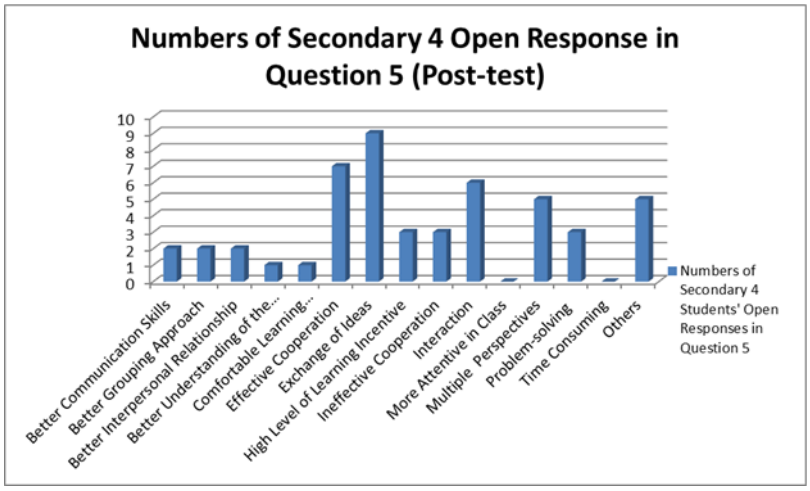


Figure 2 Numbers of Secondary 4 Open Responses in Question 5 (Post-test)

In contrast, Secondary 1 students shared only limited perception of group learning with those of senior students. Their relatively less number of self-reflection expressed in the dialogue and increase of experience of ineffective cooperation, which was indicated in the open responses suggested that Secondary 1 students did not share the principles of successful learning community mentioned in previous studies, such as Feldman (2000) and therefore explained the reasons behind their unsuccessful result of developing a classroom learning community.

In light of the diverse results of developing classroom learning community in senior and junior secondary school classrooms after the teaching intervention, screening through the research design seems to be another way to understand this finding. Looking specifically at the design of teaching intervention in section 3.3.1, there were 34 Liberal Studies lessons scheduled for Secondary 4 class and 14 lessons scheduled for Secondary 1 class throughout the whole research period. The number of lessons of Secondary 4 class was actually a double of those in Secondary 1 class. Concerning the theoretical background of learning community advocated by John Dewey in Zhu & Baylen (2005), learning through social interaction and participation requires sufficient time to be conducted. In this respect, the lack of time for Secondary 1 students to truly interact and participate in social learning seemed to be an important factor which contributed to the unsuccessful of developing classroom learning community.

5.2 Second Research Question: Is there any difference between the development of classroom learning community in junior and senior secondary school classrooms?

Regarding the results of independent-samples *t*-test, since there was no statistically significant difference of the improvement scores in all questions between the survey of Secondary 1 and 4 classes, except the question of D1 and E4 (Appendix 8), it showed statistically that students from junior and senior classes did not have any significant difference of improvement of developing classroom learning community. Thus, this finding provided a different result corresponded to the study of Zhao and Kuh (2004), which revealed that junior college students had more significant gains in academic study, interpersonal development and affiliation to the learning environment than senior college students when they studied in group. Concerning the diverse results of the study, it is worth retrieving the quantitative data of the survey. According to the mean scores of each question in the survey of the two classes,

Secondary 4 students had relatively higher scores than Secondary 1 students (Appendix 8). Specifically, the mean scores of each odd number question in Secondary 4 students' pre-test were roughly higher than those of Secondary 1 students, and vice versa for each even number question. Based on these numerical data, it is expected that in term of the quality of improvement in group learning, Secondary 4 students had better improvement than Secondary 1 students, even though there was no statistically significant difference of the improvement scores between two classes as shown in the independent-samples *t*-test. It is believed that having improvement in Secondary 4 class should be more difficult than Secondary 1 students.

Correspondingly, the open responses of the post-test of Secondary 4 students indicated that they had 'effective cooperation', 'exchange of ideas', 'interaction' and 'multiple perspectives' in group (Appendix 10, Figure 3.2), which occupied more than half of the total responses. This result is actually a double of those of Secondary 1 students.

	Numbers of Secondary 4 Students' Open Responses in Question 5	Numbers of Secondary 1 Students' Open Responses in Question 5
Better Communication Skills	2	0
Better Grouping Approach	2	1
Better Interpersonal Relationship	2	0
Better Understanding of the Content	1	2
Comfortable Learning Environment	1	2
Effective Cooperation	7	3
Exchange of Ideas	9	4
High Level of Learning Incentive	3	2
Ineffective Cooperation	3	4
Interaction	6	6
More Attentive in Class	0	1
Multiple Perspectives	5	0
Problem-solving	3	1
Time Consuming	0	0
Others	5	9
Total	49	35

Figure 3 Numbers of Secondary 1 and 4 Classes' Open Responses in Question 5 (Post-test)

Moreover, the highest response rate of having better understanding of the subject in their dialogical data provided further support to the above results (Appendix 11, Table 5.1). With

regard to the findings, these responses indicated that senior students had more sophisticated experience in group learning than junior students. To address this result, consultation on literature was subsequently conducted. As suggested by Marburger (2005), senior students are intellectually more mature than junior students and capable of applying knowledge in learning. Therefore, based on this result, it is understandable that senior students performed relatively more mature in group work than junior students.

In addition, as mentioned in Section 3.3.1 and Section 5.1, Secondary 1 students had less Liberal Studies lessons than Secondary 4 students. Furthermore, in term of the composition of the lessons, Secondary 1 class had 2 lessons and Secondary 4 class had 5 lessons per week. Given that Secondary 1 students had fewer and less intensive composition of lessons, the insignificant difference between the improvement scores of two classes indicated that improvement scores per lecture of Secondary 1 students is higher than that of Secondary 4 students. With reference to the dialogical data of Secondary 1 students, the high response rates of 'interesting' and 'high learning incentive' provided the evidence of why both classes shared the same improvement scores, even though Secondary 1 class had less Liberal Studies lessons during the research period (refer to Appendix 11, Table 5.2).

Figure 4 Frequency Coding of Secondary 1 Focus Group Interview Transcript

Code	Dialogue Variable	Frequency
M1	1. Better Communication Skills	1
M2	2. Better Cooperation	5
M3	3. Better Interpersonal Relationship	3
M4	4. Better Understanding	6
M5	5. Comfortable Learning Environment	3
M6	6. Confidence	1
M7	7. Exchange of Ideas	4
M8	8. High Level of Learning Incentive	9
M9	9. Interesting	8
M10	10. Irresponsibility	0
M11	11. Lack of Confidence	0
M12	12. Multiple Perspectives	1
M13	13. Problem-solving Skills	1
M14	14. Responsibility	3
M15	15. Other	2

Specifically, the response of Student B of gaining marks for the group (Appendix 12, Line 93) shed light on the key factors which contributed to the faster improvement of Secondary 1 students in group learning. Consistent with Lai (2004), this response indicated that giving some credits to students can motivate them to interact in group. However, it is worth nothing to consider the maintenance of students' intrinsic motivation in learning. Positive reinforcement should be given less when they start engaging in learning.

5.3 Third Research Question: How does inquiry-based learning in Liberal Studies encourage the development of classroom learning community in Hong Kong secondary school classrooms?

The results of this study contribute significant evidence to supplement previous literature on how to develop classroom learning community, especially in Hong Kong secondary school classrooms. In particular, it is worth studying the successful case of building up a classroom learning community in Secondary 4 classroom. As regards qualitative analysis, the major concerns of Secondary 4 students: the opportunity of exchanging ideas and experiencing high quality of cooperation in group echoes with the results of Harada, Lum & Souza (2003) and Yuen (2003) which emphasized the importance of giving sufficient space and time to students to conduct enquiry. Consistent with Zhao and Kuh (2004), it is evident that students learnt different dimensions and perspectives in group discussion. Then, they consequently acquired better understanding of the subject and developed higher incentive of learning. In view of this, the dialogical data obtained from two focus-group interviews also revealed that the use of diverse learning activities, such as group discussion, mind map drawing, debates, project, field trip and competition are useful to engage students in learning, and therefore enhancing students' learning incentive.

Apart from the design of the curriculum, the responses of Secondary 4 students which highlighted the effectiveness of using project-learning verified the importance of adopting continuous assessment in classroom learning community, as proposed by Harada, Lum & Souza (2003) (Appendix 13, Line 170-192). In this respect, students were motivated to learn independently and subsequently developed the sense of responsibility for their own learning as well as contribute to the common goal of the learning community.

In addition, the present study also highlights the role of teacher in developing classroom learning community with the use of inquiry-based learning. The dialogues of Secondary 4 students (Line 79-83) corresponds to the study of Fung (2012), Yuen (2003) and Yueng (2009) which indicated the important role of teacher in facilitating students' learning. This finding provided empirical evidence to ascertain the Vygotsky's (1978) concept in which expert assistance is vital for improving students' learning. In regard to the responses of Student A, B and D (Line 79-83), students were motivated to search for relevant information cooperatively after receiving scaffolds from teacher. Meanwhile, students developed higher incentive of learning and had better knowledge attainment. Based on the above results, it is worthy to note that students should be given the opportunity to conduct enquiry with the necessary support from teacher.

Chapter 6

Conclusion

In this chapter, limitations of the present study were discussed in the first section. Then, the insights of present study were drawn for potential future study. Finally, a concluding remark was given in the last section.

6.1 Limitations of the Present Study

The present study collected rich data to examine the development of classroom learning community in Hong Kong secondary schools level. Nevertheless, given the insufficient time and resources, a number of limitations need to be considered when interpreting the results. Firstly, the study was conducted in a girls' secondary school within two-months of research period. The sample size of students is limited to involved 33 Secondary 1 students and 34 Secondary 4 students. In this respect, the applicability of the concluding results to generalize the general phenomenon of classroom learning community in Hong Kong secondary schools is not guaranteed.

Methodologically, regarding the quantitative research method, the five-point likert scale used in the questionnaire-based survey was not throughout enough to include all students' point of views. Given that a number of students indicated their preference as 'neutral' in the survey, it is inevitably reduced its effectiveness of differentiating students' stance between agreement and disagreement. In view of this, six-point likert scale, including 'slightly agree' and 'slightly disagree' is recommended to be used in the survey for future study.

6.2 Insights for Future Research

This research is a precursory study on addressing the classroom learning community in Hong Kong secondary school classrooms through the use of inquiry-based learning. As a preliminary study, the research results aims to provide insights for future potential study. Initially, concerning the participants and the sample size, it is noteworthy to conduct research in boys' and coeducational colleges. Besides, a more large-scale longitudinal study is expected to be carried out in order to have a broad generalization on the development of classroom learning community in Hong Kong secondary school context. In addition, the present study was conducted in a large class setting; it is recommended that future study can focus on building classroom learning community in small class teaching. Furthermore, to widen the scope of study, teachers' perception on classroom learning community is suggested to be considered in future study. It is evident that teachers' knowledge of community building and their choices of using this educational innovation in practice had significant impacts on its development. Last but not least, as this study only adopted the issue-based enquiry advocated by CDC & HKEAA, future study is encouraged to use different models of inquiry-based learning, like problem-based learning and small-scale investigation so as to enrich the educational study in this area.

6.3 Conclusion

In conclusion, concerning the paradigm shift of current institutional practice from individual to community learning, this study introduces a promising perspective on developing classroom learning community in Liberal Studies lessons through the adoption of inquiry-based learning in Hong Kong secondary school classrooms. As suggested by the quantitative and qualitative research results, inquiry-based learning successfully encouraged the building of classroom learning community in senior secondary school classroom as well as accelerated the process of developing learning community in junior secondary school classroom. Besides, the

findings of this research provide empirical evidence of using a holistic curriculum to facilitate classroom learning community development (Lai, 2004). The integration of diverse learning and teaching activities, the adoption of formative assessment and the association with teachers' support are proved to be beneficial to students' whole-personal development.

References

Audet, R. H. & Jordan, L.K (2005). *Integrating inquiry across the curriculum*. Thousand Oaks, CA: Corwin Press.

Babbie, E. (2007). *The Practice of Social Research* (11th ed.). Belmont, CA: Thomson Wadsworth.

Bielaczyc, K., & Collins, A. (1999).Learning communities in classrooms: a reconceptualization of educational practice. In: C. Reigeluth (Ed.), *Instructional-design theories and models. A New Paradigm of Instructional Theory*, (vol. 2, pp. 269–292). Mahwah, NJ: Lawrence Erlbaum Associates.

Bouchard, T. J. (1976). Unobtrusive measures: An inventory of uses. *Sociological Methods and Research*, *4*, 267-300.

Boyer, E. L. (1987). *College: The undergraduate experience in America*. New York: Harper & Row.

Buch, N. J., & Wolff, T. F. (2000). Classroom teaching through inquiry. *Journal of Professional Issues in Engineering Education and Practice*, *126*(3), 105-109.

CDC. (2000). *Learning to learn: The way forward in curriculum development*. Hong Kong SAR, China: Curriculum Development Council.

CDC & HKEAA. (2007). *Liberal studies curriculum and assessment guide (secondary 4-6)*. Hong Kong SAR, China: Curriculum Development Council. Retrieved from http://334.edb.hkedcity.net/doc/eng/ls_final_e_070508.pdf

CEEBL (Centre for Excellence in Enquiry-Based Learning) (2007).Retrieved on April 21, 2013 fromhttp://www.campus.manchester.ac.uk/ceebl/.

Chu, K. W. S., Tse, S. K., Loh, E. K. Y., Chow, K., Fung, H. F., & Rex, H. W. (2008). *Primary four students' development of reading ability through inquiry-based learning projects.* Retrieved on May 1, 2013, from http://www.edu.hku.hk/samchu/docs/2008_dev_read.pdf.

Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches.* Thousand Oaks, CA: Sage.

Denzin, N. K. (1978). *The Research Act: A Theoretical Introduction to Sociological Methods*. New York: McGraw-Hill.

Dewey, J. (1938). *Experience and Education*. New York: Macmillan

Drucker, P. F. (1999). Knowledge-worker productivity: The biggest challenge, *California ManagementReview*, *41*(2), 79–94.

Feldman, D. H. (2000). Forward. In V. John-Steiner, *Creative collaboration* (pp. ix-xiii). New York: Oxford University Press.

Finley, N. (1991). What differences do learning communities make with faculty? An inside-out view: conversations about curriculum reform at seattle central. *Washington Center News*, *6* (1).

Fung, C. L. (2012). Group Work and the Learning of Critical Thinking in Liberal Studies in Hong Kong Secondary Schools. Unpublished thesis: The University of Cambridge.

Glassman, M., & Whaley, K. (2000). Dynamic aims: The use of long-term projects in early childhood classrooms in light of Dewey's educational philosophy. *Early Childhood Research & Practice*, *2*(1), Retrieved on 21 April 2013, from http://ecrp.uiuc.edu/v2n1/glassman.html

Harada, V. H., Lum, D., & Souza, K. (2003). Building a learning community. *Childhood Education*, *79*(2), 66–72.

Johnson, D. W., & Johnson, R. T. (1986). Mainstreaming and cooperative learning strategies. *Exceptional Children*, *52*, 553-561.

Johnson, D. W., & Johnson, R. T. (1990). Cooperative learning and achievement. In S. Sharan (Ed.), *In Cooperative Learning Theory and Practice*. New York: Praeger.

Johnson, D. W., & Johnson, R. T. (1994). *Leading the cooperative school*. (2nd ed.). Edina, MN: Interaction Book Co.

Johnson, D. W., & Johnson, R. T. (1999a). *Learning together and alone*. London: Allyn and Bacon.

Johnson, D. W., & Johnson, R. T. (1999b). The three C's of classroom and school management. In H. Freiberg (Ed.), *Beyond behaviorism: Changing the classroom management paradigm.* Boston: Allyn & Bacon.

Johnson, D. W., Johnson, R. T., & Smith, K. (2007). The state of cooperative learning in postsecondary and professional settings. *Educational Psychology Review*, *19*(1), 15–29.

Kagan, S. (1990). The structural approach to cooperative learning. *Education Leadership*, *47*(4), 12-15.

Kellogg, K. (1999). *Learning communities* (EDO-HE-1999-1).Washington, DC: ERIC Digest.

Kilpatrick, S. I., Barrett, M. S., & Jones, T. A. (2003).Defining learning communities.In *Proceedings of the AARE/NZARE Conference 2003*. Auckland, New Zealand. Retrieved 20 April 2013, from http://www.aare.edu.au/03pap/jon03441.pdf.

Kuh, G. D., Schuh, J. H., & Whitt, E. J. (1991). *Involving colleges: Successful approaches to fostering student learning and development outside the classroom*. San Francisco: Jossey-Bass Publishers.

Lai, A. U. (2004). Building a collaborative online learning community: a case study in Hong Kong. *Journal of Educational Computing Research*, *31*, 2, 119–136.

Lenning, O., & Ebbers, L. (1999). The powerful potential of learning communities: Improving education for the future. *ASHE-ERIC Higher Education Report*, *26*(6).

MacGregor, J. (1991). What differences do learning communities make?. *Washington Center News*, *6*(1), 4-9.

Marburger, D. (2005). Comparing student performance using cooperative learning. *International Review of Economics Education 4*(1): 46–57.

McMillan, J. H. (2008). *Educational research fundamentals for the consumer*. (5th ed.). Boston, MA: Pearson, Allyn & Bacon.

Pataray-Chin, J. and M. Robertson (2002)."Misconceptions about a curriculum-as-inquiry framework."*Language Arts 79*(6), 498-505.

Rose, M. L. (2008). Creating a Learning Community Through a PE Teacher's Exploration of Inquiry: A Collaborative Autoethnographic Study (Doctoral dissertation, University of Victoria, 2008).

Shih, J. L., Chuang, C. W., & Hwang, G. J. (2010). An inquiry-based mobile learning approach to enhancingsocial science learning effectiveness. *Educational Technology & Society, 13*(4), 50-62.

Slavin, R. E. (1990). *Cooperative learning: Theory, research, and practice*. Boston: Allyn and Bacon.

Smith, B. L. (2001, Summer/Fall). The challenge of learning communities as a growing national movement. *AAC&U Peer Review , 4*(1).

Spronken-Smith, R. (2008). Experiencing the process of knowledge creation: The nature and use of inquiry-based learning in higher education. *Journal of Geography in Higher Education, 2*, 183-201.

Swaner, L. E., & Brownell, J. E. (2008). *Outcomes of high impact practices for underserved students: A review of the literature*. Washington, DC: Association of American Colleges and Universities. DOI: http://www.aacu.org/inclusive_excellence/Research.cfm

Tinto, V. (1998a). Colleges as communities: Taking research on student persistence seriously. *Review of Higher Education, 21*(2), 167–177.

Tinto, V. (1998b).*Learning communities and the reconstruction of remediation in higher education.*Paper presented at the Conference on Replacing Remediation in Higher Education, Stanford University,Palo Alto, CA.

Turkmen, H. (2009). An effect of technology based inquiry approach on the learning of "earth, sun & moon" subject . *HKIEd APFLST, 10*(1).

Verner, J. M., & Adbullah, L. M. (2012). Exploratory case study research: Outsourced project failure. *Information and Software Technology, 54*(8), 866-886.

Vygotsky, L. S. (1978). Mind and society: The development of higher mental processes: Cambridge, MA: Harvard University Press.

Washington Center for Improving the Quality of Undergraduate Education. (1991). Assessment And Learning Communities: Taking Stock After Six Years. *WashingtonCenter News, 6 (1),* 1- 3.

Wells, A. (2011). Inquiry-based learning: fact or fallacy? (Doctoral dissertation, University of Manitoba, 2011). Retrieved April 1, 2013 from http://hdl.handle.net/1993/4743

Wilson, C., Grizzle, A., Tuazon, R., Akyempong, K. & Cheung, C. K. (2011) Media and information literacy curriculum for teachers. Paris: UNESCO.

Wong, K. H., & Day, J. R. (2009). A comparative study of problem-based and lecture-based learning injunior secondary school science.Research in Science Education. Retrieved May 2, 2013, fromhttp://www.springerlink.com/content/l7511p7241n221j1

Wong, S.L., & Yung, H.W. (2005).*Responses to the Newly Proposed Senior Secondary Curriculum*.Faculty of Education.The University of Hong Kong. On WWW at http://www3.cmi.hku.hk/ls/sub/ALICE-et-correct.doc

Yilmaz, K. (2008). Constructivism: Its theoretical underpinnings, variations, and implications for classroom instruction. *Educational Horizons*, *8*(3), 161-172.

Yuen, A. H. K. (2003). Fostering learning communities in classrooms: a case study of Hong Kong schools. *Educational Media International, 40*(1/2), 153–162.

Yeung, S. Y. S. (2009). Is student–centered pedagogy impossible in Hong Kong? the case of inquiry in classrooms. *Asia Pacific Education Review*, *10*, 377–386.

Zhao, C. M., & Kuh, G. D. (2004). Adding value: Learning communities and student engagement. *Research in Higher Education*, *45*, 115-138.

Zhu, E., & Baylen, D. (2005). From learning community to community learning: pedagogy, technology and interactivity. *Educational Media International*, *42*(3), 251–268.

Appendices

Appendix 1 Principal Assent Form

THE UNIVERSITY OF HONG KONG

Faculty of Education

18th February, 2013

Dear Principal,

The development of classroom learning community in Liberal Studies in Hong Kong secondary schools

As part of my B.Ed. degree I am required to conduct a small-scale study of my teaching. The study has two aims. First, this study aims to assess the effectiveness of inquiry-based learning in Liberal Studies in encouraging the development of classroom learning community in both junior and senior secondary school classrooms. Second, this study aims to understand how inquiry-based learning affects the development of classroom learning community in both forms.

The project will start in mid-February and end in mid-April. It consists of two sessions. For the first session, two classes of your students, Secondary 1B and 4C will be invited to join. A questionnaire-based survey will be distributed to both classes in mid-February and mid-April as a pre-test and post-test. They will be distributed in the classrooms of Class 1B and Class 4C at the beginning of the first and the last Liberal Studies lessons. They are used to assess students' perceptions of group learning. The class information, student class number, will be recorded for making individual comparison. However, there will be NO further personal information required for the study. For the second part of the study, 5-6 students from each of the above participant classes will be invited to join a focus-group interview. The purpose of it is to understand students' learning experience in group in-depth. The focus-group interview will be held in the classrooms of Class 1B and Class 4C after school. The group activities and group interview will be audio taped. Each of the focus-group interviews will be lasted for roughly 30 minutes and all the participants are invited to join voluntarily.

According to the University's policy on the ethical conduct of research, I am writing to ask your consent for these procedures.

I will make sure that the information students provide to me will be treated with the utmost confidentiality and anonymity. Students' participation is voluntary. They have the right not to be included in my analysis, and if I find out that a student does not wish to be included, I will act according to that wish and not include the student. They can also choose to withdraw from the study at any time without negative consequences. They have the right to review and erase the entire or parts of her audio-tape recording. The information collected will only be used for the dissertation. It will be entered into an excel file and kept in my personal computer with password protected. Moreover, data encryption technology will be adopted to ensure the confidentiality of the data. All data collected will be kept strictly confidential and used for research purpose only. It will be destroyed or returned to the school after the dissertation grade has been approved.

If you agree to these procedures, please sign one copy of this letter and return it to me. If concerns arise about this aspect of my work, please feel free to contact me (tel. 9042 6564), or Dr. Dennis Chun Lok FUNG (tel. 2219-4607). If you have questions about your rights as a research participant, please contact the Human Research Ethics Committee for Non-Clinical Faculties, HKU (tel.2241-5267).

Yours sincerely,

Ma Tak Yee, Maggie
Bachelor of Education in Liberal Studies
Faculty of Education
The University of Hong Kong

I agree to the procedures set out above to facilitate Ma Tak Yee, Maggie to conduct the research project in my school.

Endorsed by: Date:

Principal

Appendix 2 Parent Consent Form

致： 家長

通識教育科採用的探究式學習如何促進香港中學生學習社群的形成

你好，本人為香港大學教育學院通識教育科四年級的學生，現正進行一項有關通識教育科採用的探究式學習如何促進香港中學生學習社群形成的研究，並誠意邀請貴 子弟參與是次研究。此項研究主要有兩個目的：(1) 是評估通識教育科建議採用的探究式學習對於促進香港初中及高中學生在課堂上建立學習社群的成效。(2) 是旨在分析探究式學習如何促進香港初中及高中學生在課堂上建立學習社群。

貴 子弟將被邀請參加一次關於小組學習意見的問卷調查（前測）。然後，她將會在通識教育科的課堂中透過探究式學習學習課程內容。在完成課程後，貴 子弟將會被邀請參與研究的第二部分，填寫一份問卷調查（後測）。各問卷調查（前測及後測）將會於二月下旬至四月中旬在通識課堂上進行，歷時各為 5 分鐘。此外，部份學生將會被邀請參與一個小組面試，並於放學後在課室內進行，歷時約 30 分鐘。貴 子弟的參與純屬自願性質。本人將會為小組活動和小組面試錄音。貴 子弟可以檢閱聆聽她的錄音，並有權利刪除她的部分或全部的錄音。

若貴 子弟參與這項研究，她可以嘗試以探究式學習學習通識教育科，並與同學建立學習社群，學習與人相處的技巧，以及鼓勵她自主學習及培養終生學習的技能。參與上述研究保證**不會**對貴 子弟的學習和校內成績**有不良**影響，所有收集到的資料將會絕對保密和只作完成畢業論文中的研究之用。所有資料將存檔於本人的個人電腦，並加密保存，確保資料的保密性。所有資料亦會於完成畢業論文後銷毀或交回學校。所有資料只會經由校長、原任通識教育科老師及本人檢閱。基本上，此項研究的參與者的身份會被**保密**。而參與**學校的名稱**亦會受到**保護**並會以代號表示。

此函為通知閣下有關畢業論文之研究內容。如閣下對此項研究有任何查詢，請與本人馬德儀(電話: 9042 6564)及與馮俊樂教授(電話: 2219 4607)聯絡。如閣下想了解更多有關研究參與者的權益，請聯絡香港大學非臨床研究操守委員會(電話:2241 5267)。

謝謝你的幫忙！

馬德儀
香港大學教育學院
通識教育科四年級學生 謹啟

回條

學生姓名：_____ 班別：_____ 學號：_____

本人*同意 / 不同意敝子弟參加這研究。

家長簽署: _____

日期：_____

（* 請刪去不適用的）

Appendix 3 Student Assent Form

香港大學

通識教育科採用的探究式學習如何促進香港中學生學習社群的形成

學生須知及同意書

各位同學：

本人為香港大學教育學院通識教育科四年級的學生，現正進行一項有關通識教育科採用的探究式學習如何促進香港中學生學習社群形成的研究，希望與你講解一下。

我們早前已得到你父母／監護人的同意讓你參與這個活動，但你的決定對我們也很重要，如果你決定參與這個計劃，你將會參加一次關於小組學習意見的問卷調查（前測），內容包括你對於小組學習的意見。接著，將會在通識教育科的課堂中透過探究式學習學習課程內容。在完成活動後，你將會被邀請參與研究的第二部分，填寫一份問卷調查（後測）。各問卷調查（前測及後測）將會於二月下旬至四月中旬在通識課堂上進行，歷時各為 5 分鐘。此外，部份同學將會被邀請參與一個小組面試，並於放學後在課室內進行，歷時約 30 分鐘。你的參與純屬自願性質。本人將會為小組活動和小組面試錄音。你可以檢閱聆聽自己的錄音，並有權利刪除屬於你的部分或全部的錄音。

如果你參與這項研究計劃，你可以嘗試以探究式學習學習通識教育科，並與同學建立學習社群，學習與人相處的技巧，以及鼓勵你自主學習及培養終生學習的技能。所有收集到的資料將會絕對保密和只作完成畢業論文中的研究之用。所有資料將存檔於本人的個人電腦，並加密保存，確保資料的保密性。所有資料亦會於完成畢業論文後銷毀或交回學校。如你有任何問題，請於現在提出或與馮俊樂教授(電話: 2219 4607)聯絡。 多謝你的支持。

如你同意參加這研究， 請在以下空格內畫 <✓> 號， 並在橫線上簽署。

☐ 我同意參加是次研究。　　簽署:_____

或者

如你不同意參加這研究， 請在以下空格內畫 <✓> 號， 並在橫線上簽署。

☐ 我不同意參加是次研究。　　簽署:_____

學生姓名：_____班級：_____日期：_____

Appendix 4 Questionnaire-based Survey

通識教育科採用的探究式學習如何促進香港中學生學習社群的形成

各位同學你好，我是香港大學教育學院通識教育科四年級的學生，現正進行一項研究有關通識教育科採用的探究式學習如何促進香港中學生學習社群的形成。此問卷形式的調查只需 5 分鐘完成。而你所提供的資料是絕對保密，並將於研究完成後棄掉。

問卷形式的調查							
第一部份							
	題號	問題	非常不同意	不同意	無意見	同意	非常同意
積極的互賴關係	A1	我以組員的成就為自己的成就而感到驕傲。					
	A2	我較以自己的成就而感到驕傲。					
	A3	我的成就有賴與組員的通力合作。					
	A4	我的成就主要是靠自己的努力。					
面對面互動	B1	學習時，我喜歡幫助我的同學。					
	B2	遇到困難時，我不喜歡請求同學的幫忙。					
	B3	我喜歡與我的同學互動。					
	B4	我喜歡獨自在寧靜的環境學習。					
個人責任	C1	若我的組員認為面對的問題是難以解決，我仍會建議其他組員一起嘗試解決它。					
	C2	若我的組員認為面對的問題是難以解決，我會盡力嘗試解決它。					
	C3	我認為小組的預備工作是每位組員應負的責任。					
	C4	即使沒有人預備小組工作，我也應專心完成它。					
社	D1	雖然我的同學比我聰明，但是我不會感到憂慮。					
	D2	我不喜歡與比我聰明的同學同組。					

會技能	D3	若我被同學忽視，我不會投訴她們。					
	D4	若我認為有甚麼地方不對，我會立刻作出回應。					
團體歷程	E1	若我的同學認為我給予的解釋含有難以理解的詞語，我會以較淺白的詞語來改善和達成小組的目標。					
	E2	若我經常需要解釋我所用的詞語，我會感到很不耐煩，因為我不關心與同學之間的工作關係。					
	E3	若我懂得一些特別的技能，我會跟我的同學分享，藉此使全組的成員得益。					
	E4	相對於與人分享，我較喜歡自我反省，因為我不關心小組的目標。					

第二部份 （自我反思）

5. 請寫出你對小組學習的意見。

6. 請寫出你認為有甚麼因素影響你選擇小組學習或全班學習 。

— 謝謝你參與是次研究 —

Appendix 5 Questions for the Focus Group Interview

本人為香港大學教育學院通識教育科四年級的學生，現正進行一項有關通識教育科採用的探究式學習如何促進香港中學生學習社群形成的研究。首先，多謝大家參與研究的小組面談部份。

此項研究主要有兩個目的：(1) 是評估通識教育科建議採用的探究式學習對於促進香港初中及高中學生在課堂上建立學習社群的成效。(2) 是旨在分析探究式學習如何促進香港初中及高中學生在課堂上建立學習社群。研究分為２部份，問卷調查及小組面談，而小組面談的主要目的是希望更具體分析問卷調查所反映出來現象。小組面談歷時約３０分鐘。希望大家踴躍發言。

所有收集到的資料將會絕對保密和只作完成畢業論文中的研究之用。所有資料將存檔於本人的個人電腦，並加密保存，確保資料的保密性。所有資料亦會於完成畢業論文後銷毀或交回學校。所有資料只會經由校長、原任通識教育科老師及本人檢閱。如有任何疑問，請現在提出。如沒有，現在開始。

<u>問題:</u>

1. 你認為在通識科的課堂時採用探究式學習，是否有助提升班內的競爭及合作的學習氣氛？如是，為什麼？如不是，為什麼？
2. 你認為你的團體協作能力有沒有提升?

   你認為你的進步／退步是否與採用探究式學習有關? 為什麼？
3. 你認為你的人際關係有沒有改善？

   你認為你的人際關係的改善／惡化是否與採用探究式學習有關？為什麼？
4. 你（或你的同學）是否對學習通識比以往較有信心?

   如果是，是否因為課堂上的活動所致？請簡單解釋。
5. 你（或你的同學）認為自己是否比以往更有責任感？

   如果是，是否因為課堂上的活動所致？請簡單解釋。
6. 你會如何形容你在通識課堂上的小組學習經歷？為什麼？
7. 如果可以選擇，你會繼續選擇採用探究式學習學習通識科還是其他的學習模式？為什麼？

多謝大家參與是次小組面談。

Appendix 6 Paired-samples *t*-test (Comparison between Pre-test and Post-test of Secondary 1 Class)

```
GET
  FILE='E:\HKU\BEd(LibSt) Year 4\Dissertation\Appendix\Questionnaie-based Survey Dataset.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
USE ALL.
COMPUTE filter_$=(Form=0).
VARIABLE LABELS filter_$ 'Form=0 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
T-TEST PAIRS=A1_PRE A2_PRE A3_PRE A4_PRE B1_PRE B2_PRE B3_PRE B4_PRE C1_PRE C2_PRE C3_PRE C4_PRE D1_PRE D2_PRE D3_PRE D4_PRE E1_PRE E2_PRE E3_PRE
E4_PRE WITH A1_POST A2_POST A3_POST A4_POST B1_POST B2_POST B3_POST B4_POST C1_POST C2_POST C3_POST C4_POST
D1_POST D2_POST D3_POST D4_POST E1_POST E2_POST E3_POST E4_POST
    (PAIRED)
  /CRITERIA=CI(.9500)
  /MISSING=ANALYSIS.
```

T-Test (Secondary 1:Comparison between Pre-test and Post-test)

Notes

Output Created		12-MAY-2013 01:55:45
Comments		
Input	Data	E:\HKU\BEd(LibSt) Year 4\Dissertation\Appendix\Questionnaie-based Survey Dataset.sav
	Active Dataset	DataSet1
	Filter	Form=0 (FILTER)
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	34
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on the cases with no missing or out-of-range data for any variable in the analysis.

Syntax		T-TEST PAIRS=A1_PRE A2_PRE A3_PRE A4_PRE B1_PRE B2_PRE B3_PRE B4_PRE C1_PRE C2_PRE C3_PRE C4_PRE D1_PRE D2_PRE D3_PRE D4_PRE E1_PRE E2_PRE E3_PRE E4_PRE WITH A1_POST A2_POST A3_POST A4_POST B1_POST B2_POST B3_POST B4_POST C1_POST C2_POST C3_POST C4_POST D1_POST D2_POST D3_POST D4_POST E1_POST E2_POST E3_POST E4_POST (PAIRED) /CRITERIA=CI(.9500) /MISSING=ANALYSIS.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.02

[DataSet1] E:\HKU\BEd(LibSt) Year 4\Dissertation\Appendix\Questionnaie-based Survey Dataset.sav

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	A1_PRE	3.33	33	.890	.155
	A1_POST	3.76	33	.708	.123
Pair 2	A2_PRE	3.42	33	.902	.157
	A2_POST	3.55	33	.905	.157
Pair 3	A3_PRE	3.61	33	.899	.157
	A3_POST	4.12	33	.650	.113
Pair 4	A4_PRE	3.16	32	.920	.163
	A4_POST	3.13	32	1.008	.178
Pair 5	B1_PRE	3.76	33	.708	.123
	B1_POST	3.91	33	.723	.126
Pair 6	B2_PRE	2.21	33	.960	.167
	B2_POST	2.24	33	1.001	.174
Pair 7	B3_PRE	3.63	32	.871	.154
	B3_POST	4.16	32	.987	.175
Pair 8	B4_PRE	3.03	33	1.185	.206
	B4_POST	2.91	33	1.234	.215
Pair 9	C1_PRE	3.76	33	.561	.098
	C1_POST	4.00	33	.750	.131

Pair 10	C2_PRE	3.58	33	.708	.123
	C2_POST	3.88	33	.781	.136
Pair 11	C3_PRE	3.73	33	.674	.117
	C3_POST	4.06	33	.864	.150
Pair 12	C4_PRE	3.27	33	.839	.146
	C4_POST	3.55	33	.938	.163
Pair 13	D1_PRE	3.48	33	1.093	.190
	D1_POST	3.58	33	1.251	.218
Pair 14	D2_PRE	2.24	33	.867	.151
	D2_POST	1.88	33	.893	.155
Pair 15	D3_PRE	3.03	33	1.015	.177
	D3_POST	3.15	33	.870	.152
Pair 16	D4_PRE	3.45	33	.869	.151
	D4_POST	3.70	33	.810	.141
Pair 17	E1_PRE	3.45	33	.666	.116
	E1_POST	3.79	33	.740	.129
Pair 18	E2_PRE	3.09	33	.765	.133
	E2_POST	2.79	33	1.111	.193
Pair 19	E3_PRE	3.39	33	.659	.115
	E3_POST	3.79	33	.781	.136
Pair 20	E4_PRE	3.03	33	.883	.154
	E4_POST	2.64	33	1.025	.178

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	A1_PRE & A1_POST	33	.529	.002
Pair 2	A2_PRE & A2_POST	33	.358	.041
Pair 3	A3_PRE & A3_POST	33	.459	.007
Pair 4	A4_PRE & A4_POST	32	.361	.042
Pair 5	B1_PRE & B1_POST	33	.078	.668
Pair 6	B2_PRE & B2_POST	33	.302	.087
Pair 7	B3_PRE & B3_POST	32	.671	.000
Pair 8	B4_PRE & B4_POST	33	.557	.001
Pair 9	C1_PRE & C1_POST	33	.149	.409
Pair 10	C2_PRE & C2_POST	33	.356	.042
Pair 11	C3_PRE & C3_POST	33	.512	.002
Pair 12	C4_PRE & C4_POST	33	.202	.260
Pair 13	D1_PRE & D1_POST	33	.384	.028
Pair 14	D2_PRE & D2_POST	33	-.042	.818
Pair 15	D3_PRE & D3_POST	33	-.076	.674
Pair 16	D4_PRE & D4_POST	33	.157	.382
Pair 17	E1_PRE & E1_POST	33	.265	.136
Pair 18	E2_PRE & E2_POST	33	.170	.343

Pair 19	E3_PRE & E3_POST	33	.046	.799
Pair 20	E4_PRE & E4_POST	33	.358	.041

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)	Sig. (1-sided)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
					Lower	Upper				
Pair 1	A1_PRE - A1_POST	-.424	.792	.138	-.705	-.143	-3.078	32	.004	0.002125937
Pair 2	A2_PRE - A2_POST	-.121	1.023	.178	-.484	.242	-.680	32	.501	0.749424233
Pair 3	A3_PRE - A3_POST	-.515	.834	.145	-.811	-.220	-3.550	32	.001	0.000608798
Pair 4	A4_PRE - A4_POST	.031	1.092	.193	-.362	.425	.162	31	.872	0.436226117
Pair 5	B1_PRE - B1_POST	-.152	.972	.169	-.496	.193	-.895	32	.377	0.188650028
Pair 6	B2_PRE - B2_POST	-.030	1.159	.202	-.441	.381	-.150	32	.882	0.559234269
Pair 7	B3_PRE - B3_POST	-.531	.761	.135	-.806	-.257	-3.947	31	.000	0.000211445
Pair 8	B4_PRE - B4_POST	.121	1.139	.198	-.283	.525	.611	32	.545	0.2726504
Pair 9	C1_PRE - C1_POST	-.242	.867	.151	-.550	.065	-1.606	32	.118	0.059045534
Pair 10	C2_PRE - C2_POST	-.303	.847	.147	-.603	-.003	-2.055	32	.048	0.945923432
Pair 11	C3_PRE - C3_POST	-.333	.777	.135	-.609	-.058	-2.464	32	.019	0.009659848
Pair 12	C4_PRE - C4_POST	-.273	1.126	.196	-.672	.126	-1.392	32	.174	0.913214922
Pair 13	D1_PRE - D1_POST	-.091	1.308	.228	-.555	.373	-.399	32	.692	0.346149588
Pair 14	D2_PRE - D2_POST	.364	1.270	.221	-.087	.814	1.644	32	.110	0.054936382
Pair 15	D3_PRE - D3_POST	-.121	1.386	.241	-.613	.370	-.502	32	.619	0.309478491
Pair 16	D4_PRE - D4_POST	-.242	1.091	.190	-.629	.144	-1.277	32	.211	0.894593878
Pair 17	E1_PRE - E1_POST	-.333	.854	.149	-.636	-.031	-2.242	32	.032	0.015995176
Pair 18	E2_PRE - E2_POST	.303	1.237	.215	-.136	.742	1.407	32	.169	0.084504445
Pair 19	E3_PRE - E3_POST	-.394	.998	.174	-.748	-.040	-2.267	32	.030	0.015131475
Pair 20	E4_PRE - E4_POST	.394	1.088	.189	.008	.780	2.080	32	.046	0.022808912

```
USE ALL.
COMPUTE filter_$=(Form=1).
VARIABLE LABELS filter_$ 'Form=1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
T-TEST PAIRS=A1_PRE A2_PRE A3_PRE A4_PRE B1_PRE B2_PRE B3_PRE B4_PRE C1_PRE C2_PRE C3_PRE C4_PRE D1_PRE D2_PRE D3_PRE D4_PRE E1_PRE E2_PRE E3_PRE
E4_PRE WITH A1_POST A2_POST A3_POST A4_POST B1_POST B2_POST B3_POST B4_POST C1_POST C2_POST C3_POST C4_POST
D1_POST D2_POST D3_POST D4_POST E1_POST E2_POST E3_POST E4_POST
    (PAIRED)
  /CRITERIA=CI(.9500)
  /MISSING=ANALYSIS.
```

Appendix 7 Paired-samples *t*-test (Comparison between Pre-test and Post-test of Secondary 4 Class)

T-Test (Secondary 4: Comparison between Pretest and Posttest)

Notes

Output Created		12-MAY-2013 01:56:11
Comments		
Input	Data	E:\HKU\BEd(LibSt) Year 4\Dissertation\Appendix\Questionnaie-based Survey Dataset.sav
	Active Dataset	DataSet1
	Filter	Form=1 (FILTER)
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	34
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on the cases with no missing or out-of-range data for any variable in the analysis.
Syntax		T-TEST PAIRS=A1_PRE A2_PRE A3_PRE A4_PRE B1_PRE B2_PRE B3_PRE B4_PRE C1_PRE C2_PRE C3_PRE C4_PRE D1_PRE D2_PRE D3_PRE D4_PRE E1_PRE E2_PRE E3_PRE E4_PRE WITH A1_POST A2_POST A3_POST A4_POST B1_POST B2_POST B3_POST B4_POST C1_POST C2_POST C3_POST C4_POST D1_POST D2_POST D3_POST D4_POST E1_POST E2_POST E3_POST E4_POST (PAIRED) /CRITERIA=CI(.9500) /MISSING=ANALYSIS.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.03

[DataSet1] E:\HKU\BEd(LibSt) Year 4\Dissertation\Appendix\Questionnaie-based Survey Dataset.sav

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	A1_PRE	3.41	34	.701	.120
	A1_POST	3.85	34	.744	.128
Pair 2	A2_PRE	3.38	34	.779	.134
	A2_POST	3.79	34	.880	.151
Pair 3	A3_PRE	3.76	34	.699	.120
	A3_POST	4.32	34	.768	.132
Pair 4	A4_PRE	3.38	34	.779	.134
	A4_POST	3.62	34	1.015	.174
Pair 5	B1_PRE	3.79	34	.729	.125
	B1_POST	4.15	34	.702	.120
Pair 6	B2_PRE	2.44	34	1.021	.175
	B2_POST	2.35	34	1.070	.183
Pair 7	B3_PRE	3.82	34	.758	.130
	B3_POST	4.06	34	.776	.133
Pair 8	B4_PRE	3.29	34	1.115	.191
	B4_POST	3.71	34	1.142	.196
Pair 9	C1_PRE	3.88	33	.485	.084
	C1_POST	4.24	33	.614	.107
Pair 10	C2_PRE	3.91	33	.384	.067
	C2_POST	3.97	33	.770	.134
Pair 11	C3_PRE	4.24	34	.606	.104
	C3_POST	4.56	34	.504	.086
Pair 12	C4_PRE	3.65	34	.691	.119
	C4_POST	3.76	34	1.103	.189
Pair 13	D1_PRE	3.22	32	.941	.166
	D1_POST	3.97	32	.861	.152
Pair 14	D2_PRE	2.32	34	.727	.125
	D2_POST	1.85	34	.958	.164
Pair 15	D3_PRE	3.29	34	.836	.143
	D3_POST	3.62	34	.922	.158
Pair 16	D4_PRE	3.56	34	.705	.121
	D4_POST	3.62	34	.853	.146
Pair 17	E1_PRE	3.69	32	.644	.114
	E1_POST	4.03	32	.595	.105
Pair 18	E2_PRE	2.88	33	.857	.149
	E2_POST	2.36	33	1.055	.184
Pair 19	E3_PRE	3.58	33	.830	.145
	E3_POST	3.91	33	.765	.133
Pair 20	E4_PRE	2.70	33	.883	.154
	E4_POST	2.45	33	1.092	.190

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	A1_PRE & A1_POST	34	.294	.092
Pair 2	A2_PRE & A2_POST	34	.074	.677
Pair 3	A3_PRE & A3_POST	34	.090	.614
Pair 4	A4_PRE & A4_POST	34	.344	.047
Pair 5	B1_PRE & B1_POST	34	.238	.174
Pair 6	B2_PRE & B2_POST	34	.380	.026
Pair 7	B3_PRE & B3_POST	34	-.033	.852
Pair 8	B4_PRE & B4_POST	34	-.001	.994
Pair 9	C1_PRE & C1_POST	33	.522	.002
Pair 10	C2_PRE & C2_POST	33	.096	.595
Pair 11	C3_PRE & C3_POST	34	-.047	.793
Pair 12	C4_PRE & C4_POST	34	.603	.000
Pair 13	D1_PRE & D1_POST	32	.367	.039
Pair 14	D2_PRE & D2_POST	34	.375	.029
Pair 15	D3_PRE & D3_POST	34	.308	.077
Pair 16	D4_PRE & D4_POST	34	.417	.014
Pair 17	E1_PRE & E1_POST	32	.110	.547
Pair 18	E2_PRE & E2_POST	33	-.088	.627
Pair 19	E3_PRE & E3_POST	33	.528	.002
Pair 20	E4_PRE & E4_POST	33	.374	.032

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)	Sig. (1-sided)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
					Lower	Upper				
Pair 1	A1_PRE - A1_POST	-.441	.860	.147	-.741	-.141	-2.993	33	.005	0.00260154
Pair 2	A2_PRE - A2_POST	-.412	1.131	.194	-.806	-.017	-2.122	33	.041	0.97929771
Pair 3	A3_PRE - A3_POST	-.559	.991	.170	-.904	-.213	-3.289	33	.002	0.00119628
Pair 4	A4_PRE - A4_POST	-.235	1.046	.179	-.600	.130	-1.311	33	.199	0.90061926
Pair 5	B1_PRE - B1_POST	-.353	.884	.152	-.661	-.045	-2.329	33	.026	0.01306207
Pair 6	B2_PRE - B2_POST	.088	1.164	.200	-.318	.494	.442	33	.661	0.33072579
Pair 7	B3_PRE - B3_POST	-.235	1.103	.189	-.620	.149	-1.244	33	.222	0.11106974
Pair 8	B4_PRE - B4_POST	-.412	1.598	.274	-.969	.146	-1.503	33	.142	0.92879839
Pair 9	C1_PRE - C1_POST	-.364	.549	.096	-.558	-.169	-3.807	32	.001	0.00030049
Pair 10	C2_PRE - C2_POST	-.061	.827	.144	-.354	.233	-.421	32	.677	0.66173435
Pair 11	C3_PRE - C3_POST	-.324	.806	.138	-.605	-.042	-2.340	33	.025	0.01272975
Pair 12	C4_PRE - C4_POST	-.118	.880	.151	-.425	.189	-.780	33	.441	0.77950557
Pair 13	D1_PRE - D1_POST	-.750	1.016	.180	-1.116	-.384	-4.176	31	.000	0.00011178

Pair 14	D2_PRE - D2_POST	.471	.961	.165	.135	.806	2.856	33	.007	0.00368672
Pair 15	D3_PRE - D3_POST	-.324	1.036	.178	-.685	.038	-1.820	33	.078	0.03889246
Pair 16	D4_PRE - D4_POST	-.059	.851	.146	-.356	.238	-.403	33	.689	0.65529526
Pair 17	E1_PRE - E1_POST	-.344	.827	.146	-.642	-.045	-2.350	31	.025	0.01264803
Pair 18	E2_PRE - E2_POST	.515	1.417	.247	.013	1.018	2.089	32	.045	0.02239208
Pair 19	E3_PRE - E3_POST	-.333	.777	.135	-.609	-.058	-2.464	32	.019	0.00965985
Pair 20	E4_PRE - E4_POST	.242	1.119	.195	-.154	.639	1.245	32	.222	0.11114861

```
DATASET ACTIVATE DataSet1.
SAVE OUTFILE='E:\HKU\BEd(LibSt) Year 4\Dissertation\Appendix\Questionnaie-based Survey Dataset.sav'
 /COMPRESSED.
```

Appendix 8 Independent-samples *t*-test (Comparison of the Improvement Scores between Secondary 1 and Secondary 4 Classes)

```
GET
  FILE='E:\HKU\BEd(LibSt) Year 4\Dissertation\Appendix\Questionnaie-based Survey Dataset_Improvement Score.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
T-TEST GROUPS=Form(0 1)
  /MISSING=ANALYSIS
  /VARIABLES=A1_IMPROV A2_IMPROV A3_IMPROV A4_IMPROV B1_IMPROV B2_IMPROV B3_IMPROV B4_IMPROV C1_IMPROV C2_IMPROV C3_IMPROV C4_IMPROV D1_IMPROV
D2_IMPROV D3_IMPROV D4_IMPROV E1_IMPROV E2_IMPROV E3_IMPROV E4_IMPROV
  /CRITERIA=CI(.95).
```

T-Test (Comparison of the Improvement Scores between Secondary 1 and Secondary 4)

Notes

Output Created		12-MAY-2013 19:09:22
Comments		
Input	Data	E:\HKU\BEd(LibSt) Year 4\Dissertation\Appendix\Questionnaie-based Survey Dataset_Improvement Score.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	68
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on the cases with no missing or out-of-range data for any variable in the analysis.
Syntax		T-TEST GROUPS=Form(0 1) /MISSING=ANALYSIS /VARIABLES=A1_IMPROV A2_IMPROV A3_IMPROV A4_IMPROV B1_IMPROV B2_IMPROV B3_IMPROV B4_IMPROV C1_IMPROV C2_IMPROV C3_IMPROV C4_IMPROV D1_IMPROV D2_IMPROV D3_IMPROV D4_IMPROV E1_IMPROV E2_IMPROV E3_IMPROV E4_IMPROV /CRITERIA=CI(.95).
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02

[DataSet1] E:\HKU\BEd(LibSt) Year 4\Dissertation\Appendix\Questionnaie-based Survey Dataset_Improvement Score.sav

Group Statistics

	Form	N	Mean	Std. Deviation	Std. Error Mean
A1_IMPROV	Form 1	33	.42	.792	.138
	Form 4	34	.44	.860	.147
A2_IMPROV	Form 1	33	-.12	1.023	.178
	Form 4	34	-.41	1.131	.194
A3_IMPROV	Form 1	33	.52	.834	.145
	Form 4	34	.56	.991	.170
A4_IMPROV	Form 1	32	.03	1.092	.193
	Form 4	34	-.24	1.046	.179
B1_IMPROV	Form 1	33	.15	.972	.169
	Form 4	34	.35	.884	.152
B2_IMPROV	Form 1	33	-.03	1.159	.202
	Form 4	34	.09	1.164	.200
B3_IMPROV	Form 1	32	.53	.761	.135
	Form 4	34	.24	1.103	.189
B4_IMPROV	Form 1	33	.12	1.139	.198
	Form 4	34	-.41	1.598	.274
C1_IMPROV	Form 1	33	.24	.867	.151
	Form 4	33	.36	.549	.096
C2_IMPROV	Form 1	33	-.30	.847	.147
	Form 4	33	-.06	.827	.144
C3_IMPROV	Form 1	33	.33	.777	.135
	Form 4	34	.32	.806	.138
C4_IMPROV	Form 1	33	-.27	1.126	.196
	Form 4	34	-.12	.880	.151
D1_IMPROV	Form 1	33	.09	1.308	.228
	Form 4	32	.75	1.016	.180
D2_IMPROV	Form 1	33	.36	1.270	.221
	Form 4	34	.47	.961	.165
D3_IMPROV	Form 1	33	.12	1.386	.241
	Form 4	34	.32	1.036	.178
D4_IMPROV	Form 1	33	-.24	1.091	.190
	Form 4	34	-.06	.851	.146
E1_IMPROV	Form 1	33	.33	.854	.149
	Form 4	32	.34	.827	.146
E2_IMPROV	Form 1	33	.30	1.237	.215
	Form 4	33	.52	1.417	.247
E3_IMPROV	Form 1	33	.39	.998	.174
	Form 4	33	.33	.777	.135
E4_IMPROV	Form 1	33	-.39	1.088	.189
	Form 4	33	.24	1.119	.195

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
A1_IMPROV	Equal variances assumed	.022	.883	-.084	65	.933	-.017	.202	-.420	.387
	Equal variances not assumed			-.084	64.826	.933	-.017	.202	-.420	.386
A2_IMPROV	Equal variances assumed	1.251	.267	1.101	65	.275	.291	.264	-.236	.817
	Equal variances not assumed			1.103	64.685	.274	.291	.263	-.236	.817
A3_IMPROV	Equal variances assumed	.715	.401	-.195	65	.846	-.044	.224	-.491	.404
	Equal variances not assumed			-.195	63.736	.846	-.044	.223	-.490	.403
A4_IMPROV	Equal variances assumed	.476	.493	1.013	64	.315	.267	.263	-.259	.792
	Equal variances not assumed			1.011	63.310	.316	.267	.264	-.260	.793
B1_IMPROV	Equal variances assumed	.020	.888	-.888	65	.378	-.201	.227	-.654	.252
	Equal variances not assumed			-.887	63.994	.379	-.201	.227	-.655	.252
B2_IMPROV	Equal variances assumed	.004	.950	-.418	65	.678	-.119	.284	-.685	.448
	Equal variances not assumed			-.418	64.958	.678	-.119	.284	-.685	.448
B3_IMPROV	Equal variances assumed	1.268	.264	1.261	64	.212	.296	.235	-.173	.765
	Equal variances not assumed			1.275	58.832	.207	.296	.232	-.168	.760
B4_IMPROV	Equal variances assumed	3.287	.074	1.568	65	.122	.533	.340	-.146	1.212
	Equal variances not assumed			1.576	59.722	.120	.533	.338	-.144	1.210
C1_IMPROV	Equal variances assumed	1.322	.255	-.679	64	.500	-.121	.179	-.478	.236
	Equal variances not assumed			-.679	54.089	.500	-.121	.179	-.479	.237
C2_IMPROV	Equal variances assumed	1.917	.171	-1.176	64	.244	-.242	.206	-.654	.169
	Equal variances not assumed			-1.176	63.962	.244	-.242	.206	-.654	.169
C3_IMPROV	Equal variances assumed	.076	.784	.051	65	.960	.010	.194	-.377	.396
	Equal variances not assumed			.051	64.998	.960	.010	.193	-.377	.396
C4_IMPROV	Equal variances assumed	1.648	.204	-.629	65	.531	-.155	.246	-.647	.337
	Equal variances not assumed			-.627	60.546	.533	-.155	.247	-.650	.339
D1_IMPROV	Equal variances assumed	1.955	.167	-2.264	63	.027	-.659	.291	-1.241	-.077
	Equal variances not assumed			-2.273	60.170	.027	-.659	.290	-1.239	-.079
D2_IMPROV	Equal variances assumed	1.290	.260	-.389	65	.698	-.107	.275	-.655	.442
	Equal variances not assumed			-.388	59.591	.700	-.107	.276	-.659	.445
D3_IMPROV	Equal variances assumed	1.928	.170	-.678	65	.500	-.202	.298	-.798	.394
	Equal variances not assumed			-.675	59.226	.502	-.202	.300	-.802	.397
D4_IMPROV	Equal variances assumed	1.831	.181	-.770	65	.444	-.184	.239	-.660	.293
	Equal variances not assumed			-.767	60.497	.446	-.184	.239	-.662	.295
E1_IMPROV	Equal variances assumed	.005	.946	-.050	63	.960	-.010	.209	-.427	.407
	Equal variances not assumed			-.050	63.000	.960	-.010	.209	-.427	.406
E2_IMPROV	Equal variances assumed	.149	.701	-.648	64	.519	-.212	.327	-.866	.442
	Equal variances not assumed			-.648	62.856	.519	-.212	.327	-.866	.442
E3_IMPROV	Equal variances assumed	1.686	.199	.275	64	.784	.061	.220	-.379	.501

	Equal variances not assumed			.275	60.377	.784	.061	.220	-.380	.501
E4_IMPROV	Equal variances assumed	.532	.469	-2.342	64	.022	-.636	.272	-1.179	-.094
	Equal variances not assumed			-2.342	63.950	.022	-.636	.272	-1.179	-.094

Appendix 9 Results of the Open-ended Questions of Secondary 1 Class in the Questionnaire-based Survey

Question 5: 請寫出你對小組學習的意見。

Coding Table 1

Dialogue Variable	Meaning
1. Better Communication Skills	Learn how to communicate better with group members
2. Better Grouping Approach	Have a choice in grouping arrangement
3. Better Interpersonal Relationship	Have strong bond between members in a group
4. Better Understanding of the Content	Enhance understanding of the content knowledge
5. Comfortable Learning Environment	Create a positive learning environment in classroom which allow students to feel comfortable and safe to participate in every learning activities
6. Effective Cooperation	Learn how to cooperate better with group members
7. Exchange of Ideas	Express individual perspectives towards an issue
8. High Level of Learning Incentive	Eager to learn more through involving in different learning tasks
9. Ineffective Cooperation	Rely on particular members to finish group learning tasks
10. Interaction	Communicate with or react to each other
11. More Attentive in Class	Pay attention in classes
12. Multiple Perspectives	Stimulate different perspectives towards an issue
13. Problem-solving Skills	Help to solve difficult problems
14. Time Consuming	Waste of time on group learning tasks
15. Other	Dialogues which could not be coded

Table 1.1: Secondary 1 Questionnaire-based Survey – Answers of Open-Ended Question 5 (Pre-test)

1. 不錯	Other
2. 很好; 認真	More Attentive in Class
3. 一齊合作，good!	Effective Cooperation
4. 沒	Other
5. 分配工作需平均	Ineffective Cooperation
6. 很好	Other
7. 我們組太不認真	Ineffective Cooperation
8. 很好，因為我們會互相幫助	Effective Cooperation
9. 我覺得小組學習令我更加容易了解課本的知識	Better Understanding of the Content
10. 可以積極點	High Level of Learning Incentive
11. 沒有意見	Other
12. 合作	Effective Cooperative
13. 可以積極點	High Level of Learning Incentive
14. 沒有	Other
15. 他們很積極回答問題	High Level of Learning Incentive
16. 很好，因為小組學習會比正常的容易專心	More Attentive in Class
17. 我覺得小組學習較全班學習好	Other
18. 容易學習	Better Understanding of the Content
19. 專心上課	More Attentive in Class
20. 合作	Effective Cooperation
21. 要更積極	High Level of Learning Incentive
22. 我認為小組學習非常好，可以互相溝通	Exchange of Ideas
23. 要用心	More Attentive in Class
24. 我們有很多互動	Interaction
25. 不錯	Other
26. 我覺得我們很齊心，互相幫助	Effective Cooperation
27. 合作	Effective Cooperation
28. 有多 D 活動	Interaction
29. 我們十分專注上課	More Attentive in Class
30. Clever! Nice!	Other
31. 要認真完成每樣堂課	More Attentive in Class
32. 很好	Other
33. ／	Other

Table 1.2: Secondary 1 Questionnaire-based Survey – Answer of Open-Ended Question 5 (Post-test)

1. 我很喜歡這種學習方式	Other
2. 很有意義，很有興趣	High Level of Learning Incentive
3. 我覺得小組學習時要合作	Interaction
4. 請她們不要睡覺	Other
5. 很好，比全班好很多	Other
6. 可多些遊戲	Interaction
7. 小組學習比較好，因為有困難的時候能夠和組員一起解決	Problem-solving
8. 我覺得要完成工作，要與同學一起努力	Interaction
9. 很好，同學們可以互相幫助	Effective Cooperation
10. 我認為小組學習，會令我更容易明白所學習的知識	Better Understanding of the Content
11. 小組學習可以更有氣氛; 可以容易溝通	Interaction
12. 我本人很喜歡小組學習因為好以與我的組完討論	Exchange of Ideas
13. 專心	More Attentive in Class
14. 合作； 容易 D 溝通	Interaction Exchange of Ideas
15. 沒意見	Other
16. 我覺得一個小組裏大家應該要分享自己的想法	Exchange of Ideas
17. 小組學習較有氣； 與同學交流和討論問題； 輕鬆學習； 學習與人相處	Exchange of Ideas Comfortable Learning Environment
18. 覺得較鐘意，較輕鬆	Comfortable Learning Environment
19. 能學習與人相處	Interaction
20. 很好	Other
21. 很好	Other
22. 我認為應該自行分組，這樣才會容易跟組員溝通	Better Grouping Approach
23. 我覺得小組習可以令我對課本的印象增加	Better Understanding of the Content
24. 同心合力一定成功	Effective Cooperation
25. 小組太少互動	Ineffective Cooperation
26. 很好，有人幫助	Effective Cooperation
27. 其他同學應多些回答問題	Ineffective Cooperation
28. 可以合作多一點	Ineffective Cooperation
29. ／	Other

30. 好有趣，有時會搞笑下	High Level of Learning Incentive
31. Very good, nice!	Other
32. 希望各組員也可以合作	Ineffective Cooperation
33. 我很喜歡這種學習方式	Other

Table 1.3: Numbers of Secondary 1 Open Responses in Question 5 (Pre-test)

5. 請寫出你對小組學習的意見。

	Numbers of Secondary 1 Students' Open Responses in Question 5	Scaled numbers of Secondary 1 students' Responses
Better Communication Skills	0	0.0
Better Grouping Approach	0	0.0
Better Interpersonal Relationship	0	0.0
Better Understanding of the Content	2	2.1
Comfortable Learning Environment	0	0.0
Effective Cooperation	6	6.4
Exchange of Ideas	1	1.1
High Level of Learning Incentive	4	4.2
Ineffective Cooperation	2	2.1
Interaction	2	2.1
More Attentive in Class	6	6.4
Multiple Perspectives	0	0.0
Problem-solving	0	0.0
Time Consuming	0	0.0
Others	10	10.6
Total	33	35.0

Figure 1.1 Numbers of Secondary 1 Open Response in Question 5 (Pre-test)

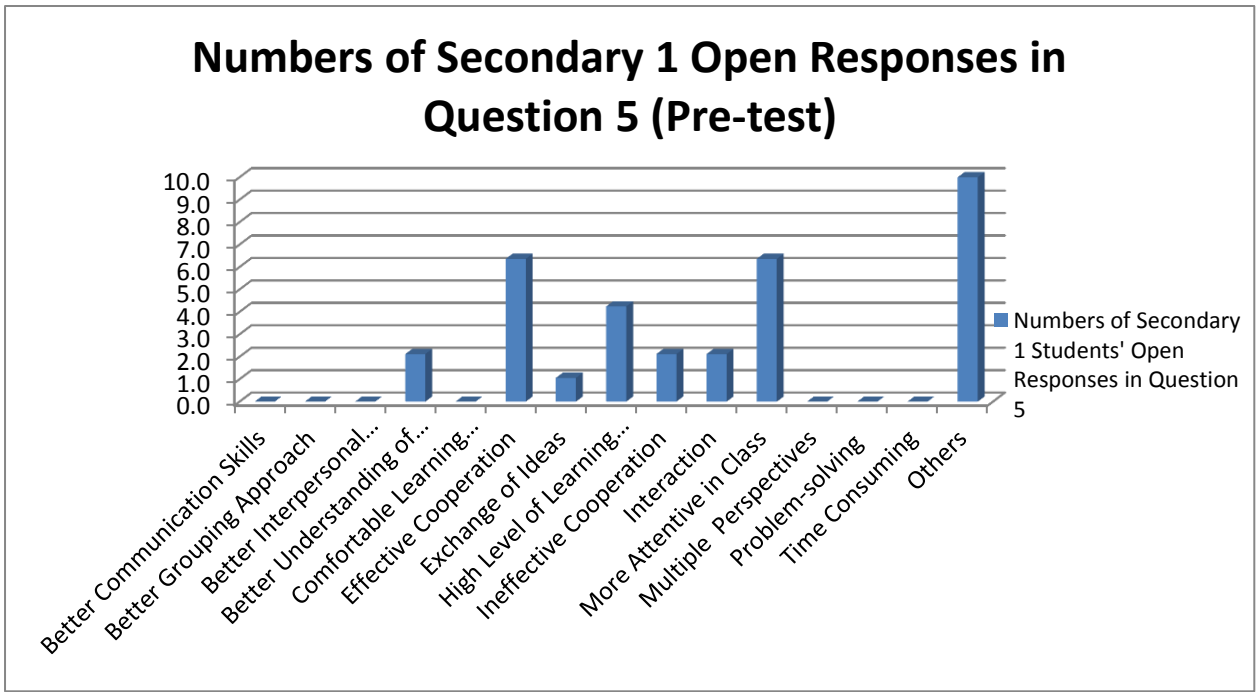
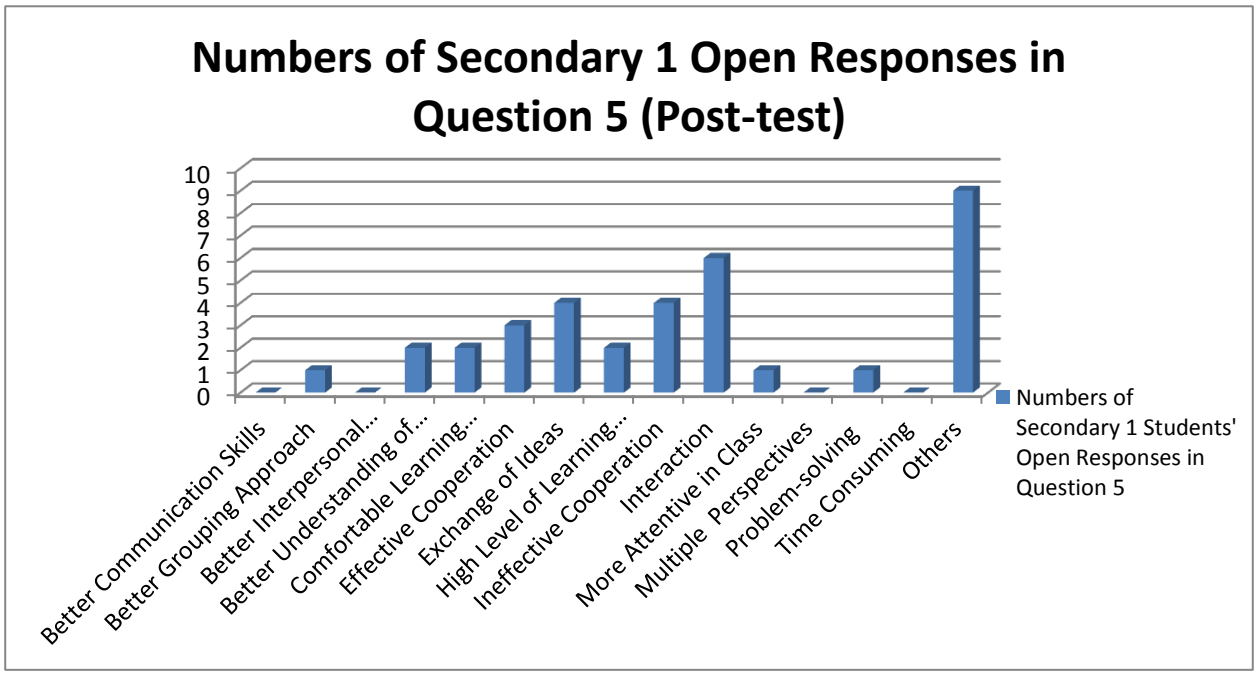


Table 1.4: Numbers of Secondary 1 Open Responses in Question 5 (Post-test)

5. 請寫出你對小組學習的意見。

	Numbers of Secondary 1 Students' Open Responses in Question 5
Better Communication Skills	0
Better Grouping Approach	1
Better Interpersonal Relationship	0
Better Understanding of the Content	2
Comfortable Learning Environment	2
Effective Cooperation	3
Exchange of Ideas	4
High Level of Learning Incentive	2
Ineffective Cooperation	4
Interaction	6
More Attentive in Class	1
Multiple Perspectives	0
Problem-solving	1
Time Consuming	0
Others	9
Total	35

Figure 1.2 Numbers of Secondary 1 Open Response in Question 5 (Post-test)



Question 6: 請寫出你認為有甚麼因素影響你選擇小組學習或全班學習。

Coding Table 2

Dialogue Variable	Meaning
1. Attitude of Others	Learning attitude of group members
2. Ability of Group Members	Capability of group members in doing group work
3. Classroom Learning Environment	The learning incentives of the whole class
4. Cooperation	The act of working together with someone or doing what they ask you
5. Efficiency	The use of time and energy in a good way, without wasting any
6. Exchange of Ideas	Express individual perspectives towards an issue
7. Grouping Approach	Choice of grouping
8. Interesting	Learn with fun
9. Teaching Approach	Choice of pedagogy adopted by teacher
10. Time	The effective use of time in the lesson
11. Topic	The issue learnt in the lesson
12. Other	Responses which could not be coded

Table 2.1: Secondary 1 Questionnaire-based Survey – Answers of Open-Ended Question 6 (Pre-test)

1. 無意見	Other
2. 積極	Classroom Learning Environment
3. 積極，努力	Classroom Learning Environment
4. 沒，想就想	Other
5. 專心	Classroom Learning Environment
6. 小組，因為能互相幫忙，比較開心	Cooperation
7. 沒有	Other
8. 多人就要小組，那就好點；全班學習就會有小小煩	Other
9. 我認為小組學習會令我更有興趣學習	Interesting
10. 友情，合作	Cooperation
11. 嘈吵	Classroom Learning Environment
12. 不專心	Classroom Learning Environment
13. 友情	Grouping Approach
14. 小組組員	Grouping Approach
15. 勇於答題	Other
16. 全班學習 so boring 丫=.= ; 小組學習 funny XD	Interesting
17. 因較喜歡而選擇	Other
18. 小組學習	Other
19. 沒有	Other
20. 不專心，吵	Classroom Learning Environment
21. 沒有	Other

22. 不知道	Other
23. 團體合作	Cooperation
24. 我選擇小組學習，因為可以多點表達自己的意見	Exchange of Ideas
25. 沒有	Other
26. 互相幫助，和同學的講通更進一步	Cooperation
27. 不專心	Classroom Learning Environment
28. 小組學習，因為可以多D表達意見	Exchange of Ideas
29. 小組學習可以和同學互動	Cooperation
30. 合作! GOOD	Cooperation
31. 全班，因為不是所有也會包容同學	Attitude of Others
32. 沒有影響	Other
33. 友情	Grouping Approach

Table 2.2: Secondary 1 Questionnaire-based Survey – Answers of Open-Ended

1. 大家一起學習那種學習態度會好點	Classroom Learning Environment
2. 小組能讓同學能有更多意見發表	Exchange of Ideas
3. 老師講課時，同學在談天	Classroom Learning Environment
4. 太吵	Classroom Learning Environment
5. 比較令人有學習動機	Interesting
6. 大家團結合作	Cooperation
7. 小組學習比較開心，能夠合作	Cooperation
8. 我覺得要團結合作	Cooperation
9. 因為我喜歡	Other
10. 我認為能容易令我學習的因素會影響我選擇小組學習	Efficiency
11. 可以更容易溝通； 甲、有些互動； 乙、有困難可以容易找人問； 丙、不過太嘈	Cooperation Classroom Learning Environment
12. 會更有信心	Other
13. 太嘈	Classroom Learning Environment
14. 容易找朋友問問題	Cooperation
15. 沒意見	Other
16. 沒有	Other
17. 全班較悶，不求甚解； 小組有氣氛，班上同學更投入	Classroom Learning Environment
18. 老師，同學，學校	Attitude of Others
19. 小組學習，因為上課比較生動	Interesting
20. 我會選擇小組學習，因為可和同學討論問題	Exchange of Ideas
21. 小組	Other
22. 可以跟人互動	Cooperation
23. 令我專心上課	Efficiency
24. ／	Other
25. 小組學習能夠多點分享彼此的意見	Exchange of Ideas
26. 合作	Cooperation
27. 選擇小組：選擇一些主動回答問題，和樂於助人的小組	Grouping Approach
28. 大家團結合作	Cooperation
29. ／	Other
30. 小組，會開心D	Interesting
31. 環境	Classroom Learning Environment
32. 學習環境	Classroom Learning Environment
33. 沒有	Other

Table 2.3: Numbers of Secondary 1 Open Responses in Question 6 (Pre-test)

6. 請寫出你認為有甚麼因素影響你選擇小組學習或全班學習。

	Numbers of Secondary 1 Students' Open Responses in Question 6	Scaled numbers of Secondary 1 students' Responses
Attitude of Others	1	1.1
Ability of Group Members	0	0.0
Classroom Learning Environment	7	7.4
Cooperation	6	6.4
Efficiency	0	0.0
Exchange of Ideas	2	2.1
Grouping Approach	3	3.2
Interesting	2	2.1
Teaching Approach	0	0.0
Time	0	0.0
Topic	0	0.0
Other	12	12.7
Total	33	35.0

Figure 2.1 Numbers of Secondary 1 Open Response in Question 6 (Pre-test)

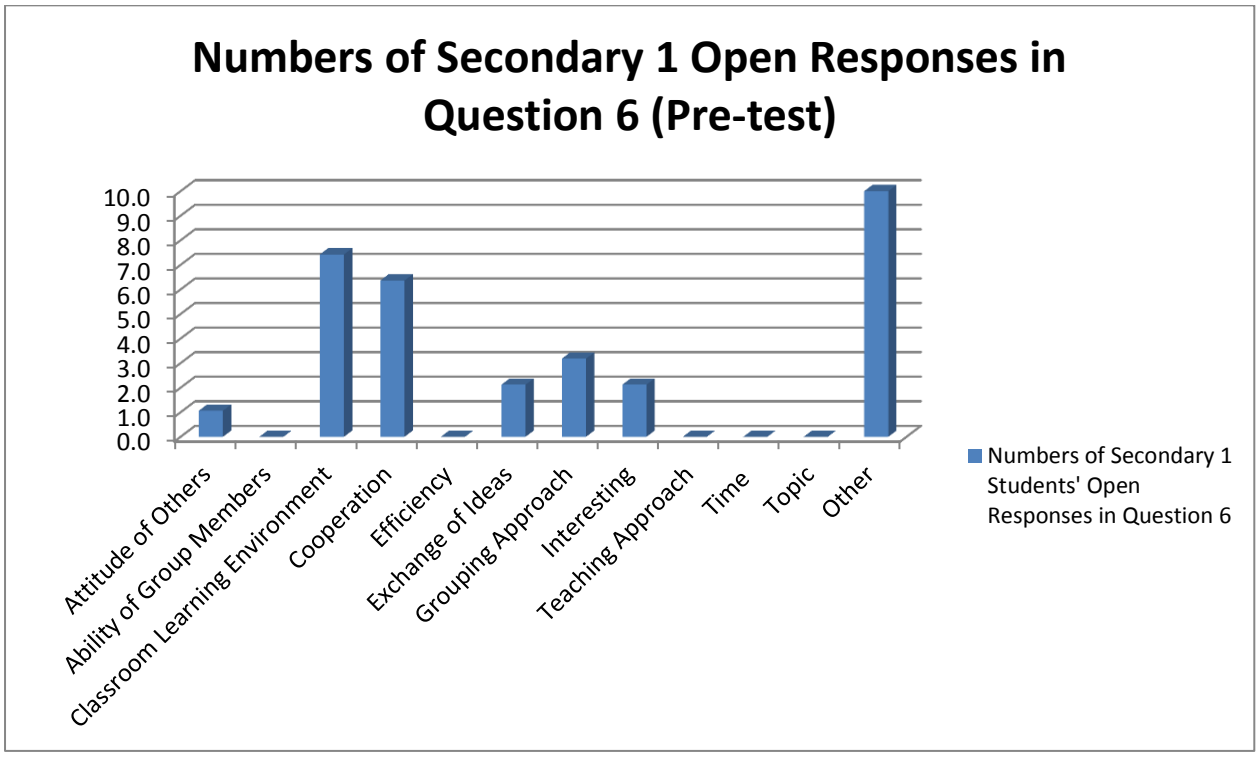
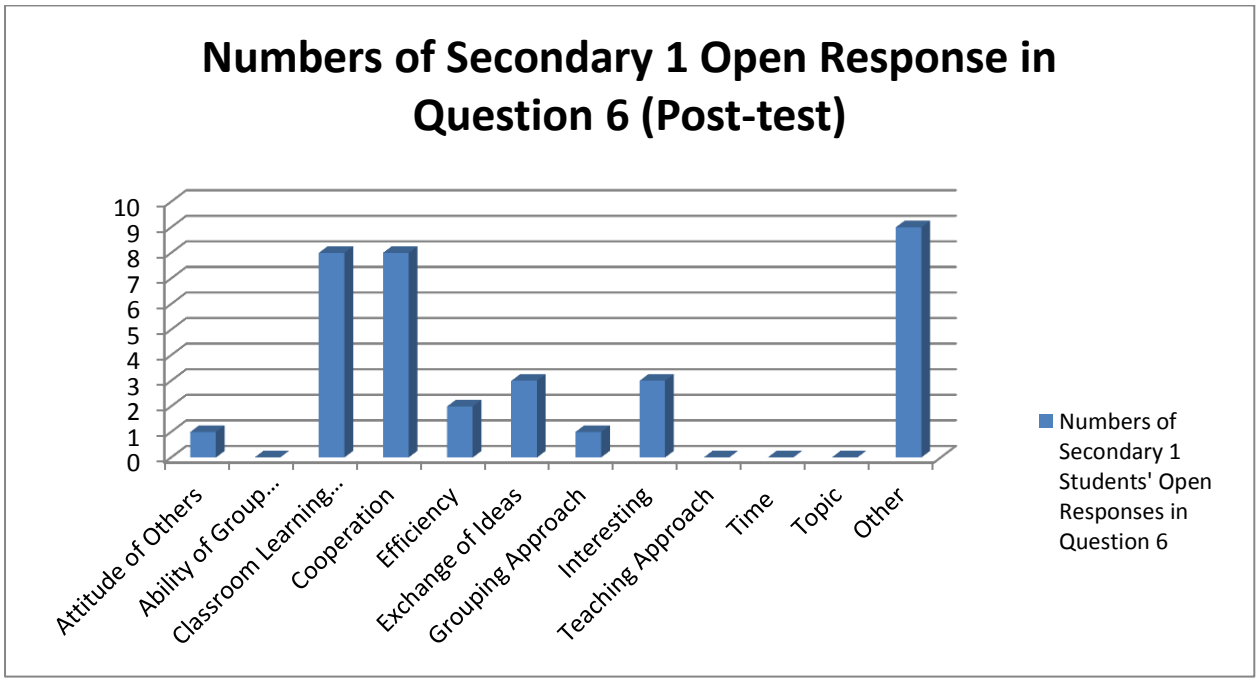


Table 2.4: Numbers of Secondary 1 Open Responses in Question 6 (Post-test)

6. 請寫出你認為有甚麼因素影響你選擇小組學習或全班學習。

	Numbers of Secondary 1 Students' Open Responses in Question 6
Attitude of Others	1
Ability of Group Members	0
Classroom Learning Environment	8
Cooperation	8
Efficiency	2
Exchange of Ideas	3
Grouping Approach	1
Interesting	3
Teaching Approach	0
Time	0
Topic	0
Other	9
Total	35

Figure 2.2 Numbers of Secondary 1 Open Response in Question 6 (Post-test)



Appendix 10 Results of the Open-ended Questions of Secondary 4 Class in the Questionnaire-based Survey

Question 5: 請寫出你對小組學習的意見。

Coding Table 1

Dialogue Variable	Meaning
16. Better Communication Skills	Learn how to communicate better with group members
17. Better Grouping Approach	Have a choice in grouping arrangement
18. Better Interpersonal Relationship	Have strong bond between members in a group
19. Better Understanding of the Content	Enhance understanding of the content knowledge
20. Comfortable Learning Environment	Create a positive learning environment in classroom which allow students to feel comfortable and safe to participate in every learning activities
21. Effective Cooperation	Learn how to cooperate better with group members
22. Exchange of Ideas	Express individual perspectives towards an issue
23. High Level of Learning Incentive	Eager to learn more through involving in different learning tasks
24. Ineffective Cooperation	Rely on particular members to finish group learning tasks
25. Interaction	Communicate with or react to each other
26. More Attentive in Class	Pay attention in classes
27. Multiple Perspectives	Stimulate different perspectives towards an issue
28. Problem-solving Skills	Help to solve difficult problems
29. Time Consuming	Waste of time on group learning tasks
30. Other	Dialogues which could not be coded

Table 3.1: Secondary 4 Questionnaire-based Survey – Answers of Open-Ended Question 5 (Pre-test)

1. 我喜歡小組學習，但以前較少小組學習的機會	Other
2. 我認為小組學習是一個非常好機會去同 groupmates 合作 or 認識 each other! However, not all of them are responsible for every project. It will not be fair to the students who do all the jobs. Anyways, everything has their own advantage and disadvantage. Personally, it's fine for me to do group-work if you wish.	Effective Cooperative Ineffective Cooperation
3. 有合作性	Effective Cooperation
4. ／	Other
5. 不太喜歡	Other
6. 好！能互相學習，互補不足	Exchange of Ideas
7. 有時唔做嘢啲人; 可以大家討論，大家會多啲溝通	Ineffective Cooperation Exchange of Ideas
8. 我不喜歡小組學習，麻煩，不鐘意個組 ge 人; 我愛全班教學多 D	Ineffective Cooperation
9. 我認為小組學習有助我們作多角度的思考，有助我們理解課室知識； 小組學習會較有趣，增強老師與同學或是同學與同學間的互動	Multiple Perspectives Better Understanding of the Content Interaction
10. 小組學習可以與別人討論，有助學習	Exchange of Ideas
11. 小組學習能得到不同同學的意見，能較容易掌握	Exchange of Ideas
12. 可透過互動的形式，與同學討論，接收唔同人嘅意見激發我地多角度思考	Multiple Perspectives Exchange of Ideas
13. 可以有更多不同的意見； 如果有困難不決解決，亦可透過大家一齊解決； 如果想不出意見，亦可透過其他人來激發自己的想法	Exchange of Ideas Problem-solving
14. 讓課堂氣氛不會太凝重	Comfortable Learning Environment
15. 是一個很好的機會去和小組學習到團體精神	Effective Cooperation
16. 比起小組學習我更喜歡自我學習，因組裏每人意見不同，長期討論下耽誤不少時間，不如自己學習好了	Time Consuming
17. 我認為這是一個好的學習方法，因為不用一個人受着壓力，而且也可以和組員分擔，從而盡中解決困難	Comfortable Learning Environment Problem-solving

18. 我認為小組學習能互相補足，對學習有幫助	Exchange of Ideas
19. 成效不錯亦能促進學習； 惟獨分組時較麻煩，建議學身邊的同學分成一組	Better Grouping Approach
20. 幾鐘意，因為各同學不同的意見可以討論出一個更好的果 （學習上的問題）	Exchange of Ideas
21. ／	Other
22. 小組習可以互相提出意見	Exchange of Ideas
23. ／	Other
24. 煩，很多人都不工作	Ineffective Cooperation
25. ／	Other
26. ／	Other
27. ／	Other
28. ／	Other
29. 我認為小組學習並不會每一個人都專注投入學習	Ineffective Cooperation
30. 我認為可以提升學習能力	High Level of Learning Incentive
31. ／	Other
32. 更容易理解課堂上的知識	Better Understanding of the Content
33. 我認為小組學習能增進同學間的關係，在通過和其他組員交流和傾談時能刺激自己思考，以及有多角度的分析和觀點	Better Interpersonal Relationship Multiple Perspectives
34. 良好，合作精神好	Effective Cooperative
35. 我認為小組學習可以有效地幫助學習，因為可有助溝通	Better Communication Skills

Table 3.2: Secondary 4 Questionnaire-based Survey – Answer of Open-Ended Question 5 (Post-test)

1. 我喜歡小組學習，增加溝通技巧	Better Communication Skills
2. Personally, Learning in groups is more useful and meaningful than self-learning because you can build up your confidence on sharing your own opinion. Although my relationships between classmates, it's one of my grown up period. I ought to improve myself on communications with everybody.	High Level of Learning Incentive
3. 有合作精神	Effective Cooperation
4. 小組學習是可以讓同學互動，互相教導對方，令彼此之間關係融合，成績更上一層樓	Better Interpersonal Relationship Interaction
5. 一個小組一起學習會有更多意見，可以分工合作，成果會更好，但亦容易比較有爭執	Exchange of Ideas Effective Cooperation
6. 學習氣氛較好，不會感到沉悶	High Level of Learning Incentive
7. 好好玩； 可以討論； 容易更加投入	High Level of Learning Incentive Exchange of Ideas
8. 合作性↑； 有困難可一起解決	Effective Cooperation Problem-solving
9. 會更有趣，更多互動，不會沉悶； 能夠集思廣益，以不同角度探討課題	Interaction Multiple Perspective
10. 分享／交流意見能有效幫助學習	Exchange of Ideas
11. 比較容易學習，比較能學習批判思考	Multiple Perspective
12. 能互相跟同組組員一起討論彼此的意見，了解到其他組員的不同意見，多角度思考	Exchange of Ideas Multiple Perspective
13. 能夠收集更多不同的意見，多角度思考，增擴見聞，擴闊視野	Exchange of Ideas Multiple Perspective
14. 有時難以專心； 專心程度會較低； 學習中會變成聊天； 意見會較多，激發自己更多想法； 吵架，無法學習	Ineffective Cooperation
15. 我比較喜歡小組學習，可以更加互動	Interaction
16. 小組學習很麻煩，每人意見各不同，難以達成共識。 而且我認為我自己做事效率更高	Ineffective Cooperation
17. 分功合作最好	Effective Cooperation
18. 我認小組學習能互補不足，事半功	Effective Cooperation

倍，有助學習。但其成果需視乎對象而定	
19. 分組較煩雜，建議將同學與鄰座的同學分為一組	Better Grouping Approach
20. 形式很好，因為遇到困難，可以與同學一起解決	Problem-solving
21. 每個同學都會說出他們的意見，一起分享，合作	Effective Cooperation Exchange of Ideas
22. 可以和同學互動，令到學習時十分生動有趣	Interaction
23. 輕鬆，較有趣，能提升團體協作能力	Comfortable Learning Environment Effective Cooperation
24. 雖然我比較喜歡獨自在寧靜的環境中做事，但偶爾和同學分組做事可以訓練我的社交能力，發生衝突時，需要溝通時都可以增加我待人接物的經驗	Better Communication Skills Better Interpersonal Relationship
25. ／	Other
26. 可以令溝通增加； 知道更多其他同學對相同的事件有着不同的意見； 可以解決問題	Interaction Multiple Perspective Problem-solving
27. 能搜集不同意見	Exchange of Ideas
28. ／	Other
29. 宜與感情較好的同學一組	Better Grouping Approach
30. ／	Other
31. 可以增加自己嘅尊心，一齊討論，學習容易D	Better Understanding of the Content
32. 好	Other
33. ／	Other
34. 小組學習能有效幫助我學習，與朋友的互動／溝通	Interaction
35. 煩，不喜歡，效率慢	Ineffective Cooperation
36. 這個方法很好，因為可以與人討論不明白的地方	Exchange of Ideas
37. 小組學習可以把各人的意見集合一起，互相交流	Exchange of Ideas

Table 3.3: Numbers of Secondary 4 Open Responses in Question 5 (Pre-test)

5. 請寫出你對小組學習的意見。

	Numbers of Secondary 4 Students' Open Responses in Question 5	Scaled numbers of Secondary 4 students' Responses
Better Communication Skills	1	1.1
Better Grouping Approach	1	1.1
Better Interpersonal Relationship	1	1.1
Better Understanding of the Content	2	2.3
Comfortable Learning Environment	2	2.3
Effective Cooperation	4	4.6
Exchange of Ideas	9	10.3
High Level of Learning Incentive	1	1.1
Ineffective Cooperation	5	5.7
Interaction	1	1.1
More Attentive in Class	0	0.0
Multiple Perspectives	3	3.4
Problem-solving	2	2.3
Time Consuming	1	1.1
Others	10	11.4
Total	43	49.0

Figure 3.1 Numbers of Secondary 4 Open Responses in Question 5 (Pre-test)

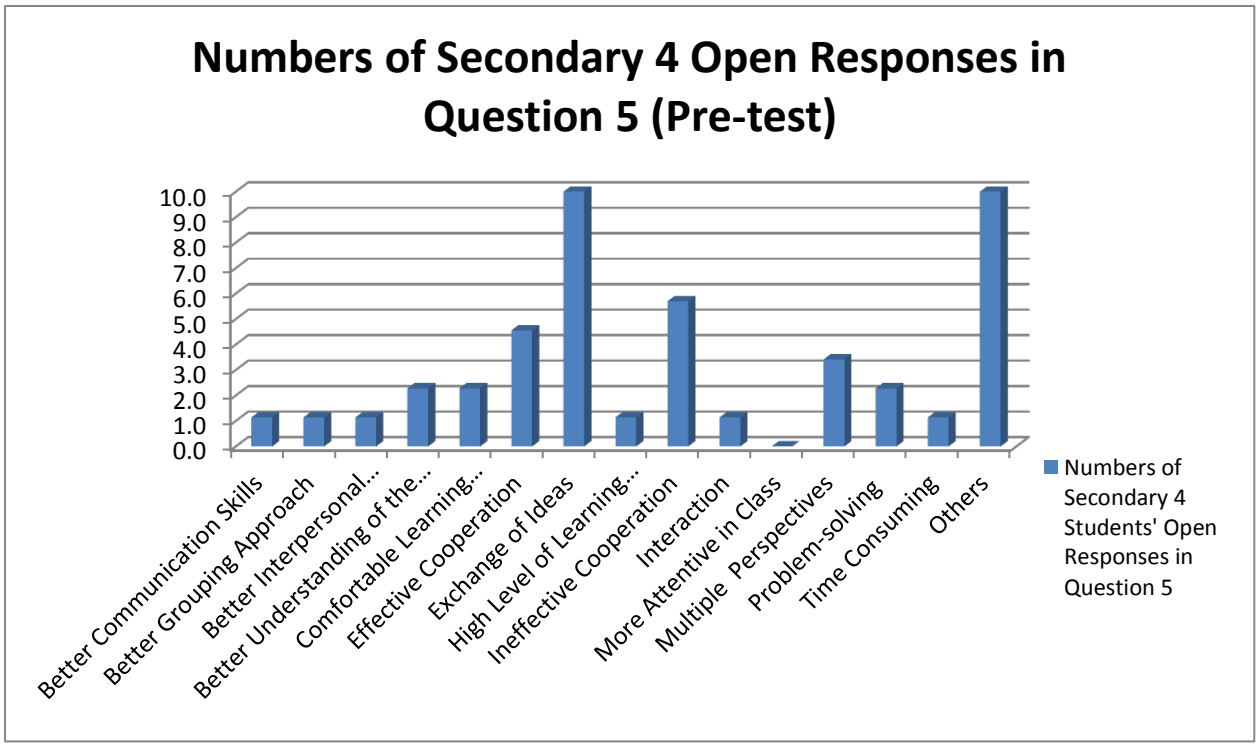
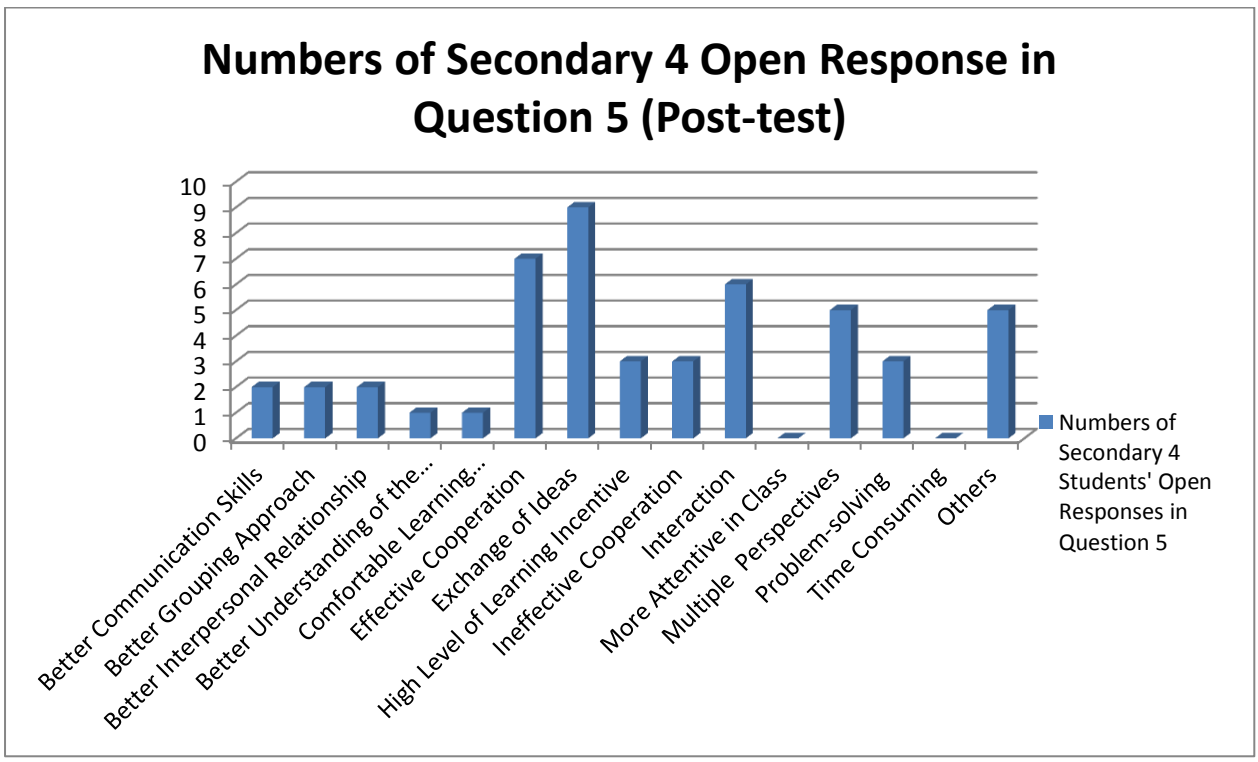


Table 3.4: Numbers of Secondary 4 Open Responses in Question 5 (Post-test)

5. 請寫出你對小組學習的意見。

	Numbers of Secondary 4 Students' Open Responses in Question 5
Better Communication Skills	2
Better Grouping Approach	2
Better Interpersonal Relationship	2
Better Understanding of the Content	1
Comfortable Learning Environment	1
Effective Cooperation	7
Exchange of Ideas	9
High Level of Learning Incentive	3
Ineffective Cooperation	3
Interaction	6
More Attentive in Class	0
Multiple Perspectives	5
Problem-solving	3
Time Consuming	0
Others	5
Total	49

Figure 3.2 Numbers of Secondary 4 Open Responses in Question 5 (Post-test)



Question 6: 請寫出你認為有甚麼因素影響你選擇小組學習或全班學習。

Coding Table 2

Dialogue Variable	Meaning
13. Attitude of Others	Learning attitude of group members
14. Ability of Group Members	Capability of group members in doing group work
15. Classroom Learning Environment	The learning incentives of the whole class
16. Cooperation	The act of working together with someone or doing what they ask you
17. Efficiency	The use of time and energy in a good way, without wasting any
18. Exchange of Ideas	Express individual perspectives towards an issue
19. Grouping Approach	Choice of grouping
20. Interesting	Learn with fun
21. Teaching Approach	Choice of pedagogy adopted by teacher
22. Time	The effective use of time in the lesson
23. Topic	The issue learnt in the lesson
24. Other	Responses which could not be coded

Table 4.1: Secondary 4 Questionnaire-based Survey – Answers of Open-Ended Question 6 (Pre-test)

1. 喜好； 安靜程度； 團隊合作； 老師	Other Classroom Learning Environment Cooperation Attitude of Others
2. In my opinion, friends is the main reason that I would like to choose group-learning or inclass-learning as we can communicate with each other in a convenience way	Grouping Approach
3. 沒有	Other
4. 我認為班裏的學習氣氛會影響到小組或全班學習	Classroom Learning Environment
5. 一個小組內未必每個也是自己的朋友，因此就算有意見也不敢說	Grouping Approach
6. 小組學習更有趣味性，組員間互相合作及討論	Interesting Cooperation
7. 小組學習：大家多啲交流，組合大家的意見 全班學習：沉悶，冇得同同學討論	Interesting Exchange of Ideas
8. 做事效率; 隊體合作; 合作性	Efficiency Cooperation
9. 同學的態度是否認真; 小組學習的活動會否有趣; 會否影響老師講解體 (如時間會否	Attitude of Others Interesting Time

不足); 能否從活動中獲得知識	Efficiency
10. 對學習有冇效	Efficiency
11. 同班同學的質素；科目	Ability of Group Members
12. 小組學習，容易投入於課堂中	Classroom Learning Environment
13. 自行分組／老師決定分組 如果可自行分組 － 選擇小組學習； 人際關係； 組員專注力高或低： 專注力高 － 較願意小組學習 專注力低 － 選擇全班學習 全班嘈（如果分組）－ 全班學習	Grouping Approach Attitude of Others Classroom Learning Environment
14. 同學的認真投入，背後所準備的資料，態度，對課程的認識	Attitude of Others
15. 在乎課題	Topic
16. 1.人際關係： 好－成果好；不好－成果差 2.自我表達能力	Grouping Approach Ability of group Members
17. 對同組人員的認識； 是否嘈吵； 老師說話的趣味性； 老師的教育方法（eg. 能否明確地令我們明白學習重點;善用網上資源,etc.）	Grouping Approach Classroom Learning Environment Interesting Teaching Approach
18. 會因應同學是否願意努力和合作為首	Attitude of Others
19. 因為分組煩複	Efficiency
20. 小組時，可能會與同學聊天，不專心上課	Classroom Learning Environment
21. 我們可以互相學習，勇於聽其他同學的意見	Exchange of Ideas
22. 聽覺問題	Other
23. ／	Other
24. ／	Other
25. ／	Other
26. ／	Other
27. 配合度	Other
28. ／	Other
29. 同學合作性; 是否寧靜; 溝通	Cooperation Classroom Learning Environment Exchange of Ideas
30. ／	Other
31. ／	Other
32. 隔壁組的因素影響學習（eg. 聊天）	Classroom Learning Environment
33. 和同學的關係，組員的素質和積極性	Grouping Approach Ability of Group Members

34. 全班開心啲	Interesting
35. 朋友之間的關係，班上的氣氛，可以大家互相討論，便選擇小組學習	Grouping Approach Classroom Learning Environment Exchange of Ideas

Table 4.2: Secondary 4 Questionnaire-based Survey – Answers of Open-Ended Question 6 (Post-test)

1. 同學; 時間; 老師的教導方法	Attitude of Others Time Teaching Approach
2. In my opinion, I would rather choose group-learning than class learning since liberal studies is a study which students need to express their feeling on commenting an news article. If we don't often share our opinion during lessons, we can't improve our knowledge as we need different ideas to answer the questions during tests or exams. Plus, I want to improve my communication strategies. That's why I would like to choose group learning! ☺	Exchange of Ideas
3. ／	Other
4. 學習氣氛； 是否能真正認真上課； 朋輩關係影響	Classroom Learning Environment Grouping Approach
5. 學習的氣氛，如果本身鬆散的話無論是小組或全班一起學習也不會好	Classroom Learning Environment
6. 小組學習，同學間交流多，氣氛↑，能夠互相幫助及學習	Exchange of Ideas Classroom Learning Environment
7. 小組可以令我投入啲，有趣，好玩啲，爭議性多啲	Interesting
8. 個人，學習因素； 做事效率	Efficiency
9. 組員的態度（小組學習）； 課題； 小組活動內容及成效； 同學是否積極	Attitude of Others Efficiency Topic
10. 成績	Other
11. ／	Other
12. 小組學習，令我可更投入於討論中，也可以較易達成共識	Efficiency
13. 朋友的關係； 組員的合作	Cooperation Group Approach
14. 成員的專注程度，吵鬧程度； 成員是不是自己的朋友； 會不會影響到我的學會； 我的成績會唔會退步	Attitude of Others Grouping Approach Efficiency
15. 更加清楚明白	Other
16. 人際關係	Grouping Approach
17. 學習環境； 同學間的交流	Classroom Learning Environment Exchange of Ideas
18. 視乎對方是否認真用心，願意付出	Attitude of Others

19. 小組的同學的學習態度較差或不較意分工合作，會令我不喜歡小組學習	Attitude of Others
20. 同學各自聊天不討論；相熟同學一組時，會忽略上課要專心	Attitude of Others
21. 較開心，上通識堂興趣上升，更有信心	Interesting
22. 麻煩，不方便	Efficiency
23. 老師的教學方法	Teaching Approach
24. 班上與同學的關係，對老師的看法，教的課題	Attitude of Others Topic
25. 專題或題目過大可以用小組學習	Topic
26. 同學的留心程度	Attitude of Others
27. 成員有不同意見會有爭執	Cooperation
28. ／	Other
29. 學習結果以及氣氛	Efficiency Classroom Learning Environment
30. ／	Other
31. ／	Other
32. ／	Other
33. 朋輩的影響，學習氣氛，認真上課	Attitude of Others
34. 性格	Other
35. ／	Other
36. 討論時過於大聲影響思考，但亦會在不明白的時候透過討論從中取得答案	Classroom Learning Environment Exchange of Ideas
37. 小組學習可以重點地因應不同人的能力學習	Efficiency

Table 4.3: Numbers of Secondary 4 Open Responses in Question 6 (Pre-test)

	Numbers of Secondary 4 Students' Open Responses in Question 6	Scaled numbers of Secondary 4 students' Responses
Attitude of Others	5	4.5
Ability of Group Members	3	2.7
Classroom Learning Environment	9	8.2
Cooperation	4	3.6
Efficiency	4	3.6
Exchange of Ideas	4	3.6
Grouping Approach	7	6.4
Interesting	5	4.5
Teaching Approach	1	0.9
Time	1	0.9
Topic	1	0.9
Other	11	10.0
Total	55	50.0

Figure 4.1 Numbers of Secondary 4 Open Responses in Question 6 (Pre-test)

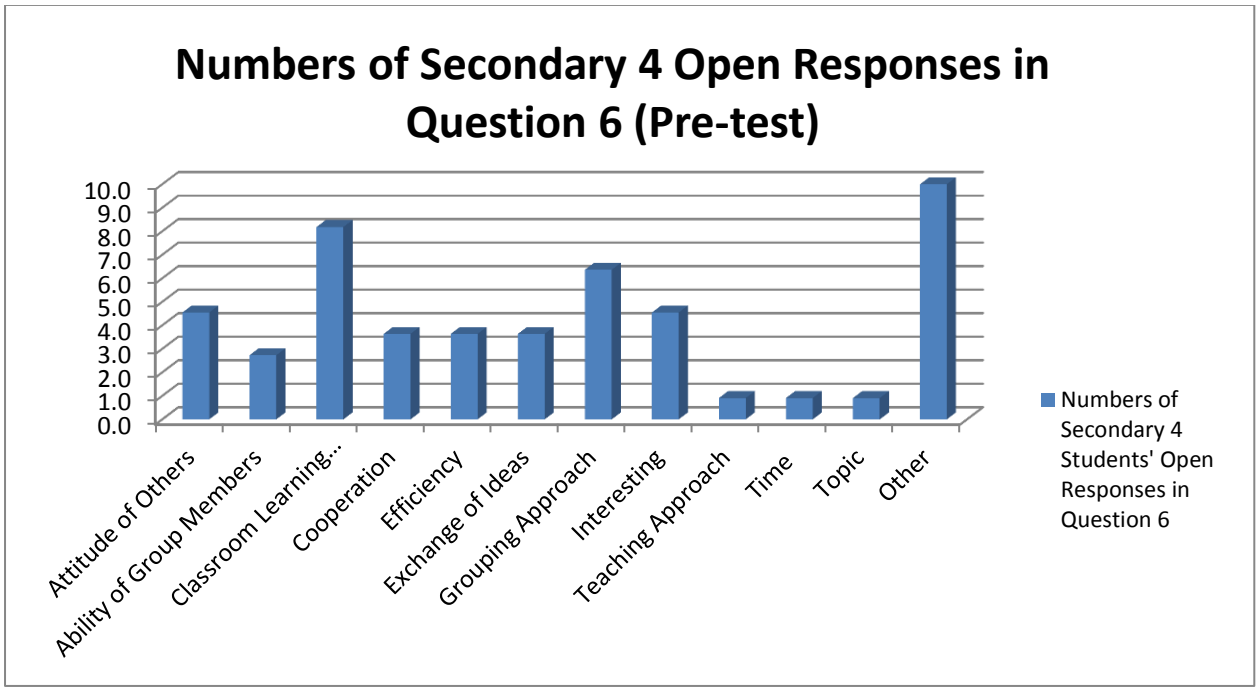
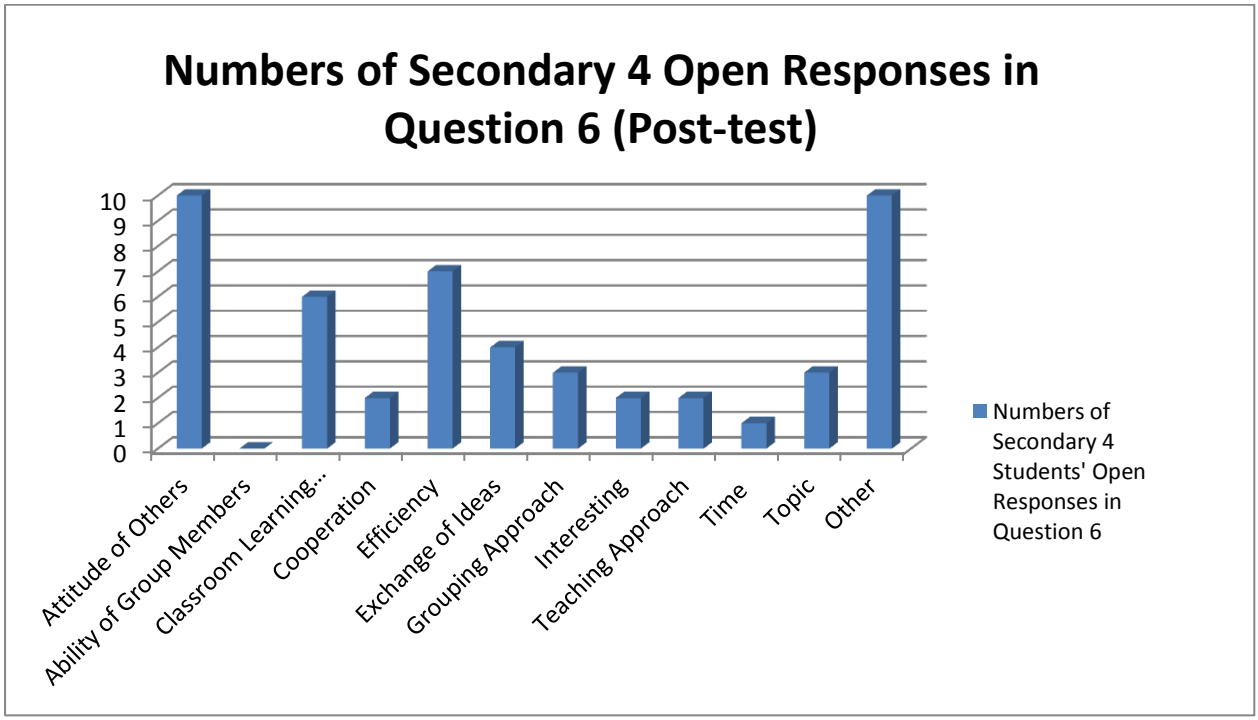


Table 4.4: Numbers of Secondary 4 Open Responses in Question 6 (Post-test)

6. 請寫出你認為有甚麼因素影響你選擇小組學習或全班學習。

	Numbers of Secondary 4 Students' Open Responses in Question 6
Attitude of Others	10
Ability of Group Members	0
Classroom Learning Environment	6
Cooperation	2
Efficiency	7
Exchange of Ideas	4
Grouping Approach	3
Interesting	2
Teaching Approach	2
Time	1
Topic	3
Other	10
Total	50

Figure 4.2 Numbers of Secondary 4 Open Response in Question 6 (Post-test)



Appendix 11 Coding Scheme of Two Classes Focus Group Interview

Coding Table

Code	Dialogue Variable	Meaning
M1	1. Better Communication Skills	Learn how to communicate better with group members
M2	2. Better Cooperation	Learn how to cooperate better with group members
M3	3. Better Interpersonal Relationship	Have strong bond between members in a group
M4	4. Better Understanding	Enhance understanding of the content knowledge
M5	5. Comfortable Learning Environment	Create a positive learning environment in classroom which allow students to feel comfortable and safe to participate in every learning activities
M6	6. Confidence	To be certain of their own abilities
M7	7. Exchange of Ideas	Express individual perspectives towards an issue
M8	8. High Level of Learning Incentive	Eager to learn more through involving in different learning tasks
M9	9. Interesting	Learn with fun
M10	10. Irresponsibility	Do not contribute in group learning
M11	11. Lack of Confidence	Suspect the creditability of group members' opinions
M12	12. Multiple Perspectives	Stimulate different perspectives towards an issue
M13	13. Problem-solving Skills	Help to solve difficult problems
M14	14. Responsibility	Have a duty to finish particular things
M15	15. Other	Dialogues which could not be coded

Table 5.1 Frequency of Codes of Secondary 4 Focus Group Interview Transcripts

Code	Dialogue Variable	Frequency (F1)	Frequency with The Same Sample Size and Time Length with S.1 Focus Group (F1)/6/(Time of S.4 Focus Group)x (Time of S.1 Focus Group) x6
M1	1. Better Communication Skills	2	1
M2	2. Better Cooperation	12	6
M3	3. Better Interpersonal Relationship	6	3
M4	4. Better Understanding	21	10.5
M5	5. Comfortable Learning Environment	5	2.5
M6	6. Confidence	8	4
M7	7. Exchange of Ideas	17	8.5
M8	8. High Level of Learning Incentive	8	4
M9	9. Interesting	8	4
M10	10. Irresponsibility	1	0.5
M11	11. Lack of Confidence	2	1
M12	12. Multiple Perspectives	9	4.5
M13	13. Problem-solving Skills	4	2
M14	14. Responsibility	18	9

M15	15. Other	7	3.5

Table 5.2 Frequency Coding of Secondary 1 Focus Group Interview Transcript

Code	Dialogue Variable	Frequency
M1	1. Better Communication Skills	1
M2	2. Better Cooperation	5
M3	3. Better Interpersonal Relationship	3
M4	4. Better Understanding	6
M5	5. Comfortable Learning Environment	3
M6	6. Confidence	1
M7	7. Exchange of Ideas	4
M8	8. High Level of Learning Incentive	9
M9	9. Interesting	8
M10	10. Irresponsibility	0
M11	11. Lack of Confidence	0
M12	12. Multiple Perspectives	1
M13	13. Problem-solving Skills	1
M14	14. Responsibility	3
M15	15. Other	2

Appendix 12 Transcription of Focus Group Interview of the Secondary 1 Class

Participants	Dialogue	Line
Moderator:	我是香港大學教育學院通識教育科四年級的學生，現正進行一項有關通識教育科採用的探究式學習如何促進香港中學生學習社群形成的研究。首先，多謝大家參與研究的小組面談部份。	1 2 3
		4
	此項研究主要有兩個目的：(1) 是評估通識教育科建議採用的探究式學習對於促進香港初中及高中學生在課堂上建立學習社群的成效。(2) 是旨在分析探究式學習如何促進香港初中及高中學生在課堂上建立學習社群。研究分為２部份，問卷調查及小組面談，而小組面談的主要目的是希望更具體分析問卷調查所反映出來現象。小組面談歷時約３０分鐘。希望大家踴躍發言。	5 6 7 8 9
		10
	所有收集到的資料將會絕對保密和只作完成畢業論文中的研究之用。所有資料將存檔於本人的個人電腦，並加密保存，確保資料的保密性。所有資料亦會於完成畢業論文後銷毀或交回學校。所有資料只會經由校長、原任通識教育科老師及本人檢閱。如有任何疑問，請現在提出。如沒有，現在開始。	11 12 13 14
		15
	首先想問下，你認為在通識科的課堂裏面採用探究式學習，係唔係有助促進班內的競爭及合作的學習氣氛呢？ 大家可以隨意發表意見。	16 17 18
		19
Student A:	係有助依個學習氣氛嘅，因為當中係通識堂裏面，我地以小組的討論嚟學習嘅，可以同啲同學一齊交流下，令個氣氛好啲。	20 21
Student B:	咁同人一齊坐，咁樣你唔明都可以問下隔離。	22
Moderator:	其他同學呢？	23
Student C:	我覺得係有助提升班內的競爭同埋學習氣氛嘅。因為呢，可以好似一個辯論隊咁樣就比賽啦，咁可以得着。。。。。。雖然你係攞唔到獎，但係你可以收到一份好好的學習經驗。	24 25 26
Student D:	同埋我地係以小組嘅形式進行，以小組應該會比較投入去依個課堂。	27
Moderator:	有冇其他同學會對依一樣野有意見？	28
		29
	如果冇嘅話，咁我想問下，你認為你的團體協作能力有沒有提升?	30
Student D:	有，因為如果有唔識嘅野可以問佢，佢又會答你。	31
Student A:	我都覺得係有。因為小組裏面可以加分嗎，咁就有個團結嗰個精神係度囉，就想幫自己嗰組去贏。	32 33
Student B:	答問題之前可以同隔離嗰個商量下，唔駛咁悶。	34
Student E:	係囉，仲有如困答問題錯咗的話，可能你小組裏面的組員可能會幫到你，令到你明白番嗰個答案嗰條問題。	35 36
Student F:	有陣時上堂抄 notes，如果老師跳過咗，你又抄唔哂，隔離嗰個可以借返俾你抄，會好ｄ。	37 38
Student C:	有，因為可以，如果側邊嗰個同學唔識，咁隔離嗰個可以幫手教下。	39
Moderator:	仲有有團體協作嗰方面有提升到架？	40
		41

	咁係唔係因為有探究式學習依樣野架呢？係唔係同依樣野有關架呢？	42
Students:	係	43
Moderator:	咁點解呢？	44
Student C:	因為每個人搵嘅資料出嚟都唔同嘅，咁大家可以係各個同學搵嘅資料，識咗其他唔同的方，即係比如一個困難可以解決唔同嘅方法。	45 46
Moderator:	仲有冇？ 咁我地睇下之後嗰題喇，咁你嘅人際關係有冇改善到？	47 48 49
Student A:	係有嘅，因為係小組裏面我地係拍住一齊坐，咁就可以係堂課裏面係度交流問題，同埋了解隔離嗰個人嘅性格，點樣，有陣時係小組的活動可以將就下。	50 51 52
Student E:	其實都有嘅，因為小組討論，會有幾名同學一齊一組，咁然之後可能有陣時唔係成日同佢傾計，或許甚至可能唔熟佢。如果上堂嘅話，用依個探究式學習同埋一組嘅方法可以有改善同學相處之間。	53 54 55
Moderator:	有啲咩嘢改善呢？不如講下。講下啲例子吖不如。	56
Student E:	例如我有陣時唔識功課，佢可以幫到你，因為始終同組，可能 discussion 都係一樣。	57 58
Student B:	咁你有陣時有ｄ問題搞笑下，咁同隔離嗰個都會 friend　ｄ。	59
Student A:	小組討論不一定同ｄ你平時玩開嘅人一齊坐，所以同一個同佢無咁 friend 或者成日一齊玩嗰ｄ會識多一兩個會 friend　ｄ囉可以。	60 61
Moderator:	有冇其他？ 係唔係因為平時上堂的活動令到你的人際關係好咗呢？ 係唔係同老師係課堂裏面用嘅教學模式，用一ｄ小組學習，睇下片等你地討論下同依樣野係唔係有關呢？	62 63 64 65 66 67
Student B:	你有時睇片會訓著覺架嗎，好悶架嗎。	68
Student A:	或者如果係嗰個活動裏面你有嘢唔明嘅，可能老師就唔到你嘅 level 去教你嘅，可能同你同輩嗰ｄ可能比較容易學到嘢。	69 70
Moderator:	仲有冇其他意見？ 冇嘅話我地再唸下其他題目。咁你或者你的同學係唔係對學習通識比以往較有信心?	71 72 73 74
Student C:	係，因為用其他可以同小組一齊做，唔洗一個人講，講衰咗都無咁樣衰。	75
Moderator:	其他同學呢？	76
Student B:	自己一個嘅話唔識做都有，即係問隔離嗰個唔理你，你同組嘅話可能可以教返你。	77 78
Moderator:	其他同學？	79
Student D:	因為課堂有趣令到Ｄ同學有興趣去再學通識囉。	80
Moderator:	你頭先講興趣啦，可唔可以講下Ｄ事例呀？	81
Student D:	睇片。	82
Student E:	小組討論囉。	83
Student A:	搶答環節。	84

Moderator:	仲有冇其他？	85
Student D:	一啲問答嘅比賽。	86
Moderator:	係唔係都可以提升到你對於學習通識的信心呢？ 例如同學話小組討論可以提升到你對於學習通識有信心，可唔可以講一講？又或者其他搶答呀，可以點樣提升到你對於學習通識有信心？	87 88 89 90
Student A:	搶答，令自己嗰個腦轉得快D。	91
Student E:	係囉，搶答如果你無信心你唔會踴躍去答嗰條問題	92
Student B:	你想攞分同自己嗰組。	93
Student F:	你嗰排答開，跟住你嗰幾堂又有答喎，跟住之後又轉返冇依D咁樣嘅上堂，但你都會慣咗會去答。	94 95
Moderator:	習慣係唔係吖？	96
Student F:	係。	97
Moderator:	其他同學有冇意見？ 咁都想問下，你（或你的同學）認為自己係唔係自己比以往更有責任感呢？	98 99 100
Student B:	都係嘅，你可能有時分開一組邊個做D咩邊個做D咩，咁你唔做隔離嗰個都會鬧你，咁你有種目的咁去做。	101 102
Student E:	其實都係嘅，因為始終一組去學習，咁可能好多時都會分唔同工作去做喇，如果其中一個組員如果真係無責任心，無責任咁樣去做嗰樣嘢可能會牽涉到其他人，其他同學都可能完成唔到嗰樣功課等等。	103 104 105
Student C:	仲有，如果嗰個同學真係冇咩責任心做唔到嗰樣功課嘅話，可以其他同學都可以幫到佢。	106 107
Student D:	想問係唔係因為課堂裏面嘅活動而影響到你覺得你比以往有責任心架？	108
Student A:	因為小組討論呢是靠團體去完成，如果冇責任感咪完成唔到。	109
Moderator:	點解呢？	110
Student C:	因為係組裏你自己都有份架嗎，咁除咗為自己之餘，仲可以為你同組，所以都有責任係度。	111 112
Moderator:	仲有冇其他？ 咁你點樣形容你在通識課堂上的小組學習經歷？或者大家分享一下。	113 114 115 116
Student A:	好有氣氛，同埋嗰個反應係好踴躍。	117
Student D:	有挑戰性	118
Student E:	係囉，冇比之前唔係小組討論嘅課堂會有趣好多，無咁悶。	119
Student F:	小組嘅話，你答嗰D問題分開，傾完之後俾一個同學去答咁會無咁多人一齊搶（答）一條問題。	120 121
Moderator:	其他同學呢？	122
Student B:	會開心D，隔離嗰D，你發下夢，隔離拍下你有時又會笑下。	123
Student C:	會生動D。	124
Moderator:	生動？例如有冇D例子可以講下？	125
Student C:	比如你搶答的時候，你起碼都會有D刺激咁，可以幫助，起碼有個刺激性。	126
Student E:	如果你係你組裏面問啱咗問題，甚至你成功搶答咗條問題之後呢，你嘅組員	127

	會鼓勵你吖，為你而驕傲吖。	128
Moderator:	有冇啲咩經驗曾經試過可以分享吓？	129
Student C:	好似有一次做工作紙，咁就要鬥快，如果最快嘅話呢就有分囉啦，咁我嗰組有四個人，咁其中一個人寫字好慢，咁我同其他同學一齊鼓勵佢，等佢快啲完成，最後都可以成功攞咗分。	130 131 132
Moderator:	其他同學呢？ 咁到最尾喇，如果你可以選擇，你會繼續選擇採用探究式學習學習通識科還是其他的學習模式？	133 134 135 136
Student B:	小組。	137
Student A:	我會選擇一個小組嗰個學習形式同埋或者有一個 outing，因為通識範圍好大，一本書裏面唔可以裝得到哂你所學的嘢。所以我會覺得如果學到一啲書本內冇嘅嘢可能會更加好。	138 139 140
Student F:	探究式學習。因為你上堂小組咁樣你有得討論呢，咁會唔會自己一個咁寡，自己上堂唔係用小組，無得用小組討論嘅話你會好悶，咁就會無麥心情去聽書。	141 142 143
Student C:	我都係會揀探究式學習，因為除咗係書本學到唔同知識之外，你仲可以上網搵其他知識，同埋你可以你其他組員都會帶唔同資料番嚟，都會學到更多野。	144 145 146
Student E:	都係囉，都係啲可能 outing 的學習模式，即係可以學到一啲係課堂學唔到嘅知識，甚至去體驗其他課本以外嘅知識。	147 148
Student D:	小組會嗰溝通方法會再高啲，如果小組討論嘅話	149
Moderator:	改善溝通係咪？	150
Student D:	唔。	151
Moderator:	仲有冇其他？ 咁好喇，咁多謝大家參與小組面試嘅，唔該哂。	152 153 154

Appendix 13 Transcription of Focus Group Interview of the Secondary 4 Class

Participants	Dialogue	Line
Moderator:	我是香港大學教育學院通識教育科四年級的學生，現正進行一項有關通識教育科採用的探究式學習如何促進香港中學生學習社群形成的研究。首先，多謝大家參與研究的小組面談部份。 此項研究主要有兩個目的：(1) 是評估通識教育科建議採用的探究式學習對於促進香港初中及高中學生在課堂上建立學習社群的成效。(2) 是旨在分析探究式學習如何促進香港初中及高中學生在課堂上建立學習社群。研究分為２部份，問卷調查及小組面談，而小組面談的主要目的是希望更具體分析問卷調查所反映出來現象。小組面談歷時約３０分鐘。希望大家踴躍發言。 所有收集到的資料將會絕對保密和只作完成畢業論文中的研究之用。所有資料將存檔於本人的個人電腦，並加密保存，確保資料的保密性。所有資料亦會於完成畢業論文後銷毀或交回學校。所有資料只會經由校長、原任通識教育科老師及本人檢閱。如有任何疑問，請現在提出。如沒有，現在開始。 首先想問下，你認為在通識科的課堂裏面採用探究式學習，係唔係有助促進班內的競爭及合作的學習氣氛呢？	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Student A:	係有嘅。因為分組咁樣上堂呢，咁遇到唔識嘅問題會即刻發問或者同組員傾，咁會加深上緊堂嗰個同學嘅概念囉。	20 21
Student B:	係有提升到嘅。因為分組咁自己唸嘢可能同其他人唸嘅嘢唔同，咁自己唸到嘅嘢人地又可能唸唔到，人地唸到嘅嘢我又可能唸唔到喇，咁會知道更加多嘅嘢，跟住知道一啲自己唸唔到嘅嘢，咁就擴闊咗我嘅視野。同埋較容易記到，因為人地講呢，無老師講得咁悶吖嗎。	22 23 24 25
Student C:	係有嘅。因為分組呢咁就無咁緊張喇，有啲咩問題可以一齊討論。	26
Student D:	係有嘅，如果分組嗰時我覺得即係如果可以互相聽吓對方嘅意見呢跟住互相互補，互補不足，可以互相學習咁樣。	27 28
Student E:	唔，其實呢有嘅，因為呢我覺得呢，如果呢同學之間會無咁悶吖嗎，搞到通識堂嘅學堂氣氛會更加高啲，係喇。	29 30
Moderator:	你諗到啲咩講就得架喇。唔駛咁緊張。	31
Student B:	同埋探究式學習就因為學生發揮嘅，咁就可能比起上堂聽好好多，因為上堂成日有Ｄ聲唔想聽喇。同埋太過唔好玩喇。探究式學習好玩啲，易上腦啲。	32 33
Moderator:	同學可唔可以講吓你頭先話唔好玩，可唔可以具體啲咁講吓？	34
Student B:	上堂因為佢講嗰啲粒粒都係字，你明唔明吖？好唔想聽吖，講埋啲好似廢話但係好有用，咁我唔想聽呢。但係探究式係自己唸，然之後係要思考嘅，所以就易學啲啦。	35 36 37
Moderator:	其他同學？有無其他同學想補充？	38
Student A:	我覺得可以提升學生嘅多角度思維吖。因為當你淨係你一個人靠上堂聽嘅話咁你唸嘅方向淨係得單方面喇，但你有同其他同學討論嘅話呢，可以改善到同學思維嘅方向，咁從而呢令到通識科呢嘅成績高啲，因為呢通識科著重多角度思考咁上下架嗎。	39 40 41 42

Student F:	就係有嘅。因為呢同自己嘅同學去學喇，咁上堂嘅氣氛好啲囉。就係咁喇。	43
Moderator:	例如呢？點樣好法？	44
Student F:	例如小組討論嗰陣時呢，就會互相溝通喇，多啲嘢講喇，就會學多啲嘢。	45
Moderator:	同學有冇其他補充？	46
Student F:	無喇。	47
Moderator:	好喇，咁我地呢就唸下其他問題喇。	48
		49
	咁你認為你的團體協作能力有沒有提升?	50
Student E:	我講！有。因為呢有時分組喇，咁嗰老師要我地做一樣嘢成組一齊做先可以結合咗唔同嘅意見架嗎，先可以出黎 present。	51
		52
Student B:	係嘅，咁呢團隊協作力呢，就合作去做一樣嘢，咁樣呢同朋友去做呢係會成功啲嘅。因為你溝通方法易啲架嗎，有啲唔啱 channel 嗰啲呢，有少少溝通唔到。。。。。。	53
		54
		55
Student F:	有代溝。	56
Student B:	即係你同你自己啲 friend 做嘅會容易啲，同埋唔洗講你都知佢想做啲咩咁。	57
Moderator:	其他同學？	58
Student C:	係有，因為團體嘅時候遇到啲咩問題大家一齊唸，嗰個默契就會好啲，協作能力就會上升喇。	59
		60
Student B:	即係我地依組都試過一齊做一啲嘢嘅，咁就真係做得幾好嘅。	61
Moderator:	例如呢？可唔可以分享下？	62
Student B:	例如好似上次 mindmap 我地做過喇，咁我地考察做過喇，咁又開心啲一齊考察。	63
		64
Moderator:	你覺得你嘅協作能力係點嘅呢係考察裏面期間？	65
Student E:	分工合作。	66
Student B:	分工合作。分工得好好。	67
Moderator:	例如呢？	68
Student B:	例如路線吖，點樣行吖。	69
Student B:	有啲人帶路呀，有啲人影相。	70
Student E:	有啲人帶路呀，有啲人睇資料	71
Student B:	又有啲人負責計劃，有啲後期製作咁，都幾開心。	72
Moderator:	有冇其他同學？	73
		74
	想問大家覺得團體協作能力有進步係唔係同探究式學習有關？	75
Student B:	我覺得係有關嘅。	76
Student C:	我覺得係有關嘅。	77
Moderator:	係，點解呢？	78
Student B:	因為探究式學習係學生自己做嗎，老師協助喇，咁老師協助俾啲資料我地，我地自己去做，自己去搵資料咁，嗰個過程係容易啲學嘢。	79
		80
Student A:	另外，我就覺得因為變咗個主動性變咗係個學生度，而老師係輔助喇，咁老師會更加專注學生邊方面唔夠好，咁會專注教返嗰一部份喇，咁會令到學生吸收大啲。	81
		82
		83
Student D:	我認為有進步嘅。即係我地個個都會喇，因為其實探究式學習呢係真係多數係學生自己主動去做，主動去搵，主動去搵資料咁。係喇，所以你嘅知識，	84
		85

	你嘅 knowledge 呢會上升，會漸漸上升喇。	86
Moderator:	其他同學有冇？　或者可以分享下你係探究式學習裏面，你嗰個協作嘅過程。 除咗同學頭先所講考察，考察嗰度可以令到你嘅團體協作能力就可以提升到，咁有冇其他嘅事例？又或者你係覺得唔得架喎，原來探究式學習唔可以架喎，都可以分享嘅。	87 88 89 90 91
	探究式學習你係同朋友先有用。即係你求其ｄ搵人分組係無用。因為同佢地溝通唔到。同埋有啲人係會以為自己好醒，講好多廢話。分組嘅話，探究式學習係要學生主導嘅話，同朋友係易囉。但你同啲唔熟識嘅人係一齊就唔易囉。	92 93 94 95
Student A:	同埋呢呢個如果分組呢，你要分呢，分嗰陣時因為多數係圍內朋友你先會出力做喇。如果本身嘅感情唔係特別好呢，你係樣樣野都會斤斤計較，唔肯落力去做喇，咁樣會令到可能會達至個反效果可能會啲人唔會做嘢喇，咁同平時上堂學呢可能仲衰ｄ，就係咁喇。	96 97 98 99
Student D:	同埋同啲唔識嘅人一齊呢，即係一齊分工合作呢，即係互相個關係呢會好尷尬喇，咁可能會心入面呢腦入面呢已經 ready 好 d 意見，但係驚人話佢，所以同 friend 之間一齊會好好多。	100 101 102
Moderator:	仲有冇其他同學？如果冇嘅話唔緊要嘅。 咁好喇，你認為呢你嘅人際關係有冇改善到？係個小組嗰度？	103 104 105
Student B:	係有，認為呢好多時人際關係呢方面我地係 friend 咗嘅。咁就係我地去考察喇，就係咁。	106 107
Student F:	咁我地呢就互相去溝通喇，咁就增進咗個友誼喇，感情喇，嗰人際關係就多咗喇。	108 109
Student C:	我都覺得我地人際關係係有改善嘅，因為我地有問題一齊討論喇，跟住就改善咗溝通喇，跟住呢比之前 friend 咗喇，咁人際關係就會有改善。	110 111
Moderator:	咁係唔係同探究式學習有關？你頭先所指嘅改善？又或者同學可唔可以俾少少具體嘅例子，例如話有啲咩嘢過程裏面，係表現到你地人際關係係好咗或者差咗？	112 113 114
Student A:	我覺得呢主要係如果講話係進步咗，我覺得係即係例如係我地上堂要辯論呀，咁未必個個人嘅論點一樣，但可能係一組只可以派一個，咁一定要溝通集合所有人嘅論點先可以出去同人地辯論架嗎。如果唔係可能會好容易輸。咁你係溝通嘅過程入面呢，你會了解到其他組員唔同嘅性格吖，思維嘅唸法吖，咁了解多咗自自然然你嘅合作性會提升喇。	115 116 117 118 119
Moderator:	其他同學？	120
Student E:	其實呢，唔係淨係同組裏面嘅人傾架嗎。可能有時你出去討論個時你同其他組傾，係喇，咁唔係淨係提升自己組嗰ｄ人際關係喇，係唔係先？	121 122
Moderator:	有冇其他同學補充呢？ 咁我地唸下其他喇。咁你係唔係對於學習通識比以往更加有信心呢？	123 124 125
Student A:	依個係絕對嘅。 因為通識依家嘅 term 係已經係同大學嘅水平無咩分別架喇。咁呢通過依個，	126 127 128

	因為依個 term 太難，所以每一個人係上堂嗰時候老師講緊嘢嘅時候嘅理解都唔同喇，通過成班人一齊傾，咁你可以容易啲理解，因為老師嘅經驗呢係同我地學生嘅唔同架嗎，所以呢自自然然呢老師嘅思維又唔會同學生一樣喇，咁學生就會同學生一齊傾喇。 咁學生傾嘅過程入面呢，好自然呢學生，其中求其一方都會比較接受啲喇，所以呢學習通識個時就會有信心啲喇。	129 130 131 132 133 134 135
Student B:	係有信心咗嘅，因為其實由中一到中三，佢啲通識都係要背嘅，咩珠三角嗰啲，真係要背返嚟嘅，唔係自己吹到出嚟喇。即係你要有嗰個 term 係到，咁跟住係你要背先識答先有分囉，咁你依架就如果係討論嘅，咁你啲知識係唔同方面去聽返嚟都唔同喇，咁就即係可能你嘅思考可能會多咗喇，就會了解咗唔同嘅思考方法喇，唸到啲你唸唔到嘅嘢喇。	136 137 138 139 140
Student D:	係，我覺得係有信心。因為自信心上升。	141
Student A:	有信心咗。	142
Student D:	係，有信心咗。因為我覺得頭先 B 同學講嘅嘢係啱。因為 form 1 至 form 3 係靠死背爛背嗰 d 咩消費者 6 頂帽嗰啲呢，嗰 d 真係靠死背嗰 d 啲呢填充。但係依家我地升到 form 4 成熟咗，d 問題高難度加超級難，靠自己嘅腦真係郁要郁一郁喇，唔係靠背喇，咁靠同啲同學一齊，即係點講，唸嘅話會容易 d，會有信心。	143 144 145 146 147
Student A:	你可以 speak English。	148
Student F:	咁課堂上面啲活動呢，就會令到我地對通識更加有信心喇。因為同學之間互相去溝通，就會對通識嗰個概念多咗，咁就會更加有信心比以前。	149 150
Moderator:	同學話對通識嘅概念多咗，例如有啲嘢嘢？即係可以具體少少講。例如有啲嘢嘢？	151 152
Student A:	地產霸權嗰啲呀。	153
Student F:	例如嗰啲新聞喇，地產霸權嗰啲生活質素。	154
Student A:	仲有根據同參考。	155
Student F:	係吖。	156
Student E:	主題句。根據資料。	157
Student F:	根據資料，參考資料一嗰啲。	159
Student A:	係唔同架原來。	160
Student F:	點樣去搵到嗰啲論點吖，去搵到重點嗰啲 point。	161
Moderator:	有冇補充？無嘅話唔緊要。 即係都係同課堂活動有關係唔係吖？	162 163 164
Student E:	係。	165
Student F:	係。	166
Student A:	係。	167
Moderator:	好。咁你認為自己係唔係自己比以往更有責任感呢？	168
Student E:	都係。	169
Student D:	係有嘅，因為探究式學習呢係靠自己去搵架嗎，如果唔搵嘅話，咁你係主角，咁如果你唔搵嗰份，例如喇分組跟住做 project 嗰啲喇，如果一個人做嘅話咁成個 project 嗰個效果結果成果呢唔係太好囉。即係要靠自己，每一個人	170 171 172

	都要靠自己嘅。	173
Student A:	責任心。	174
Student D:	責任心。	175
Student B:	咁係嘅，責任心係比以往強。因為呢，form 1 至 3 呢都係呢唔洗做啲咩好大嘅 project 喇，咁做嗰啲工作紙都係抄返書入面嗰啲嘢先至做到嘅。但依個呢真係要自己一手一腳去做先得嘅，咁要有個責任心先可以完成到份功課喇。	176 177 178
Student C:	我都覺得係有嘅，因為呢我地依架多咗分組喇，我地 team 就要分工合作，每個都有啲唔同嘅職位喇，咁唔做嘅話就會拖累成 team 嘅進度喇，咁樣就會有責任感喇。跟住，有冇補充呀？	179 180 181
Student F:	咁課堂上面嗰啲活動呢，咁同學就會分配唔同嘅工作喇，咁就會佢地之間溝通就會好啲，咁就會有責任去做好某一樣嘢，咁就會主動啲，咁比以前更加有責任感。	182 183 184
Student A:	因為初中做嘅 project 都係普普通通上網 copy and paste 已經可以喇，但係呢依家係著重每一個人嘅參與嘅反思。咁如果唔係每一個人都有反思係度嘅話根本無可能當你交咗功課架嗎，所以呢，自自然然可以話係迫嘅呢，但每一個人都一齊參與囉。	185 186 187 188
Student D:	我都曾經試過，即係 form 1 至 form 3 呢啲功課呢真係照抄，睇書或者衰啲咁講真係照抄隔離嗰啲 friend 嗰啲，但係依架呢難咗喇，所以要靠自己喇。有時啲書搵唔到喇，跟住係要靠有時特登上網睇下，睇下參考書嗰啲先搵到個答案，即係要 mix 埋一齊，係囉，你明架喇。	189 190 191 192
Moderator:	除咗你個人，團體裏面呢？	193
Student E:	團體要有責任感，準時交功課。唔係呀，咁你定立咗個時間幾時交，我地唔可以 hea 住嚟做喎係唔係先。Hea mode 吖。係喇，大家都要有個責任感一齊準時交依個嗰日嘅功課。	194 195 196
Student B:	咁團體呢，你要為你自己嗰個團體去負責任去做，因為可能淨係你一個人無做好就令到成個嘢彎哂喇，咁就可能搞到唔能夠如期完成喇，或者搞到成個分低咗，所以每個人嘅責任都好重要嘅，不論團體同個人都好重要。	197 198 199
Student D:	仲寶貴過一千蚊。	200
Moderator:	可唔可以具體少少講？	201
Student A:	其實一千蚊係好少嘅。	202
Student D:	即係其實，舉例子，一千蚊可以問媽咪 daddy 囉返嘅，但係我地真係要靠我地每一組嘅付出，就好似砌積木咁，可以聯繫每一個人嘅 part 都好重要喇。	203 204
Moderator:	仲有冇補充？ 咁你點樣形容你係通識堂裏面小組學習嘅經歷呢？	205 206 207
Student C:	非常充實，學咗好多嘢。有責任感。探究式學到有責任感，我人際關係有上升喇，跟住我團體合作能力高咗，學咗好多嘢，好充實。學咗好多課外嘅知識，睇咗好多短片。	208 209 210
Student B:	係喇，咁呢小組學習經歷呢係可以聽到好多唔同同學嘅意見喇，咁再組織返呢，就發現自己學到好多嘢喇，咁真係好充實嘅，咁真係比起你坐定定聽老師講嗰 d term 係有趣啲喇，即係比較開心架喇。即係比較會有個動力去上嗰個堂囉。洗唔洗俾例子仔吖？	211 212 213 214
Moderator:	好吖，俾埋例子吖。	215

Student B:	就好似辯論吖，小組討論咁囉，考察囉。	216
Moderator:	過程裏面係點樣樣？	217
Student B:	過程裏面就係學到好多人際關係喇，有信心同埋有責任感嘅。	218
Student A:	其實我覺得幾成功嘅，因為淨係講通識堂要用嗰啲 term 吖，講新聞好明顯呢正正係學生覺得最悶嘅嘢喇，堂遇到最悶嘅嘢嘅時候，唯一可以做嘅就係上堂訓覺喇，咁呢依家小組學習呀嗎，咁你即使聽唔明都好，你都可以同隔離啲 friend 啲同學傾下。咁因為你係成組人架嗎，所以呢我覺得係幾成功嘅。	219 220 221 222
Student B:	係喇，同埋呢通識呢依幾年先開始興起，先至新增嘅科目變成必修科，咁好多人唔了解依科係咩嚟嘅，無一個明確嘅指標話俾你聽通識係嘥，好多人都唔知，經過小組學習經歷可以知道原來唔同範疇都可以係通識科入面架喎。即係你要好關心所有野喇，咁你先可以擴闊到視野，批判性思考。咁當中真係學到責任感囉。	223 224 225 226 227
Moderator:	其他同學？或者大家都分享下你嘅小組經歷。你可以俾例子都得嘅。	228
Student E:	經歷呢就呢，開心 share，即係點講好呢唔識講。	229
Student C:	我覺得呢就有趣咗喇，因為有時候一個人嘅時候比較緊張，唔敢出嚟 present 喇，如果小組嘅時候就會無咁緊張，就好似我有一個好切身嘅經驗，咁就係呢我之前自己一個嘅時候呢唔敢出嚟講嘢嘅，因為驚俾人笑喇，講得錯呢又會俾人鬧喇。咁小組嘅時候會大家一齊討論喇，過程又會生動啲喇，有趣啲喇，又有人支持喇，咁一齊出嚟 present 嘅時候就唔會咁緊張。	230 231 232 233 234
Student B:	無影響表現？	235
Student C:	無影響表現，同埋可以恰當地運用啲相關概念。 有無補充？	236 237
Student E:	其實小組學習呢嘅過程中，大家嘅爭議性好勁嘅。係喇，咁大家嘅概念、意見唔同，咁大家咁講講講講講，講完就個波出嚟喇。	238 239
Student A:	真係好 amazing。	240
Student E:	係喇。	241
Student B:	係嘅，咁係經歷堂中呢，咁就係知道咗有啲嗲嘢係主觀喇，有啲嗲嘢係客觀喇，有啲嗲嘢係宏觀喇，有啲嗲嘢係微觀。	242 243
Student F:	經濟嚟架喎依啲。	244
Student B:	通識嘅範疇裏面係無指定架。咁係小組經歷入面呢，你集合咗你唔同同學反對或者支持嘅意見，跟住你再組識一下，你真係會發現到呀！	245 246
Student F:	呀，原來咁樣。	247
Student B:	真係學到好多嘢。	248
Moderator:	咁好喇，到最尾喇。 想問如果你可以選擇，你會繼續選擇採用探究式學習學習通識科還是其他的學習模式？	249 250 251 252
Student A:	首先問下咩叫其他學習模式呀？	253
Moderator:	你自己唸下。	254
Student C:	Hea mode 係唔係架?	255
Moderator:	你以往其他學習嘅經驗。	256
Student E:	咁我緊係覺得探究式喇，係唔係先？咁因為呢平時都係坐係度好悶咁樣聽，探究式可以出去同同學溝通，去搵一啲地方，又搵到裏面啲資料，啲歷史咁	257 258

	樣，係喇。	259
Student B:	咁呢，我覺得呢探究式同普通上堂式嘅學習呢其實兩樣都應該係平均啲嘅。因為有時你探究式學習係俾同學學習下點樣同同學溝通，點樣一齊搵唔同嘅意見，咁去學習下人地唔同嘅唸法。咁樣但係有時上堂都需要嘅，就好似法治依啲，你一定無能可能無拿拿探究式可以學到嘅嘢。即係你唔會無拿拿自己唸到以法限權，咁樣，無可能嘅。	260 261 262 263 264
Student F:	以法達義。	265
Student B:	你真係要上堂聽老師講你先學到嘅啲 term。即係嗰啲珠三角，你俾我我都唔識無拿拿嘔到啲嘢出嚟，即好似新聞呀，比較可以俾同學發揮嘅就可以用探究式學習。	266 267 268
Student F:	我呢就會揀探究式學習通識。因為呢，其他學習模式就係淨係一個人嘅意見，自己。探究式學習會同好多唔同嘅意見一齊嘅，就會多角度嘅。	269 270
Student C:	我都會揀探究式學習喇。探究式學習俾我地嘅感覺呢無咁緊張喇，課堂嘅氣氛輕鬆啲喇，跟住有團體合作吖，人際關係好啲吖，有信心啲，之後呢大家分工合作就會有責任感啲。	271 272 273
Student B:	我覺得探究式學習之餘呢，仲可以係生動有趣嘅方式學習通識喇。就好似睇片，睇片比較易入腦啲嘅，睇劇呢睇一次你都可以背得到啲劇個啲對白，你不如俾條片，跟住俾我背哂啲通識佢喇。或者 powerpoint 都幾有趣，即係有啲相，咁比較容易理解，用 mindmap 嘅方法都係好容易入腦。因為有比較批判性思考，唔好一段文字，係會死嘅。	274 275 276 277 278
Student A:	係呀，因為呢雖然話就話試卷係文字咁出，但係如果學嗰陣時唔好咁多字嚟睇喇，覺得個學生會容易啲吸收喇。咁你平時會有讀書嘅習慣架嗎，咁所以通識堂或者其他堂都毋需要要學生上堂嗰時睇咁大篇嘅文章。係喇，係咁喇，但係其實我地唔係傾依樣嘢。	279 280 281 282
Student B:	探究式學習其實真係深深體會到比較易入腦，真係係馬老師開始教學都用咗好多探究式學習嘅方法。都成日分組吖，畫下 mindmap 吖，做下 project，其實真係易學啲嘅。有時你真係唔會有心去背一本書，但係你做完探究式學習某一個 project，可能你做一次你已經記得哂大概內容，比起你普通上堂易入腦。	283 284 285 286 287
Student F:	我認為探究式學習就會對我地嘅中文同埋英文嘅說話係有幫助嘅。	288
Moderator:	點解呢？	289
Student F:	會增加溝通嘅技巧，	290
Student A:	點解英文會提升咗嘅？我地用中文教架喎通識。	291
Student F:	咁通識有啲係英文架嗎，係唔係先？	292
Student B:	例如呢？	293
Student C:	GDP，係唔係呀？	294
Student B:	係喇，有時呢比較名詞呀，即係地產霸權，嘍嘍霸權呀。	295
Student A:	文化霸權。	296
Student B:	你明唔明嗰啲比較檔房，嗰啲名詞呢，我覺得用探究式去學佢內容會易過你搵本書話俾我聽檔房係指嘍嘍嘍，地產霸權係指嘍嘍嘍，你不如俾幅圖我或者俾我討論我覺得容易啲學囉。	297 298 299
Moderator:	有冇其他同學有其他嘅意見架？即係你可以分享返你之前學習嘅經驗架。	300
Student B:	即係有如馬老師咁真係，我認真架，我覺得好容易學。探究式學習認真嘅比	301

	較容易掌握。	302
Student C:	容易吸收知識。	303
Student B:	容易吸收啲真係你可能唸嚟唸去都可能咁樣。	304
Student C:	靈活去運用。	305
Student B:	唔同人係，即係唸法唔同，經歷又唔同，對每件事嘅睇法都唔同囉。	306
Moderator:	有冇同學有其他嘅補充？其他嘅意見？咁如果無嘅話咁我地依個小組面談呢就完結架喇，好多謝大家參與。	307 308